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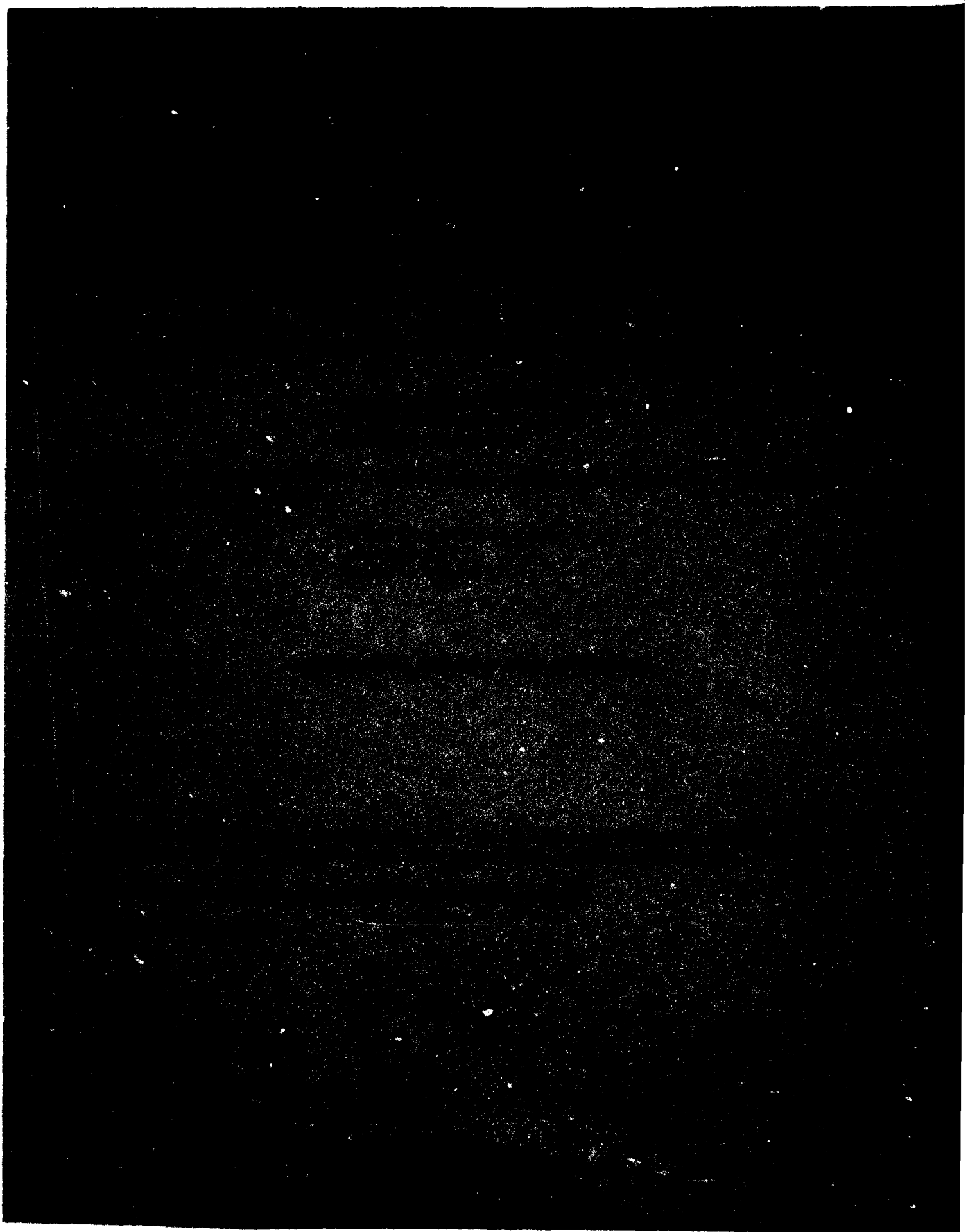

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→ The USAF C-141A is a transport aircraft powered by four TF33-P-7 turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for three power conditions. Near-field data are reported for ten locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and

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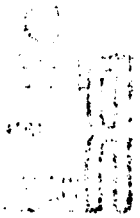
A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1), 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.



PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise from Air Force Operations and 723108, Crew Safety in Operational Noise Environments.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert Lee, Mr. Jerry Speakman and Lt Thomas Rau for their assistance in acquiring the raw data, Mr. Henry Mohlman, Mr. Keith Kettler and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing and Mrs. Peggy Massie for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF C-141A is a transport aircraft powered by four TF33-P-7 turbofan engines. The aircraft was manufactured by the Lockheed Aircraft Corporation and the engines by United Aircraft, Pratt and Whitney Division.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the C-141A aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook* Volume *2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the C-141A aircraft during ground runup operations of its turbofan engines. For these tests, the aircraft was located on a concrete parking apron at Wright-Patterson AFB along with other similar aircraft. Table 1 gives the engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location.

Figure 1 shows the ten numbered near-field locations where ground crews are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test conditions A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the C-141A aircraft at the ten ground crew locations. This table includes the overall, 1/3 octave band and octave band levels. From these data one can calculate the variety of measures given in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS FOR NEAR-FIELD NOISE MEASUREMENT

C-141A Aircraft, Ground Runup, Wright-Patterson AFB, OH
8 and 14 May 1979
Tail #12777

Ground Crew Location

1	MD-3 Operator
2	Engine #4 Start
3	Engine #3 Start
4	Electric Disconnect
5	Engine #2 Start
6	Engine #1 Start
7	Right Wheel Well
8	Engine Trim
9	Telephone Talker
10	Left Wheel Well (Near APU)

Aircraft Engine and Ground Support Equipment Operation

A	MD-3
B	MD-3 and APU
C	MD-3 and Engine #4 Idle
D	MD-3 and Engine #3 and #4 Idle
E	Engines #2, #3, and #4 Idle
F	All Engines Idle
G	Engine #3 Maximum Power Other Engines Idle

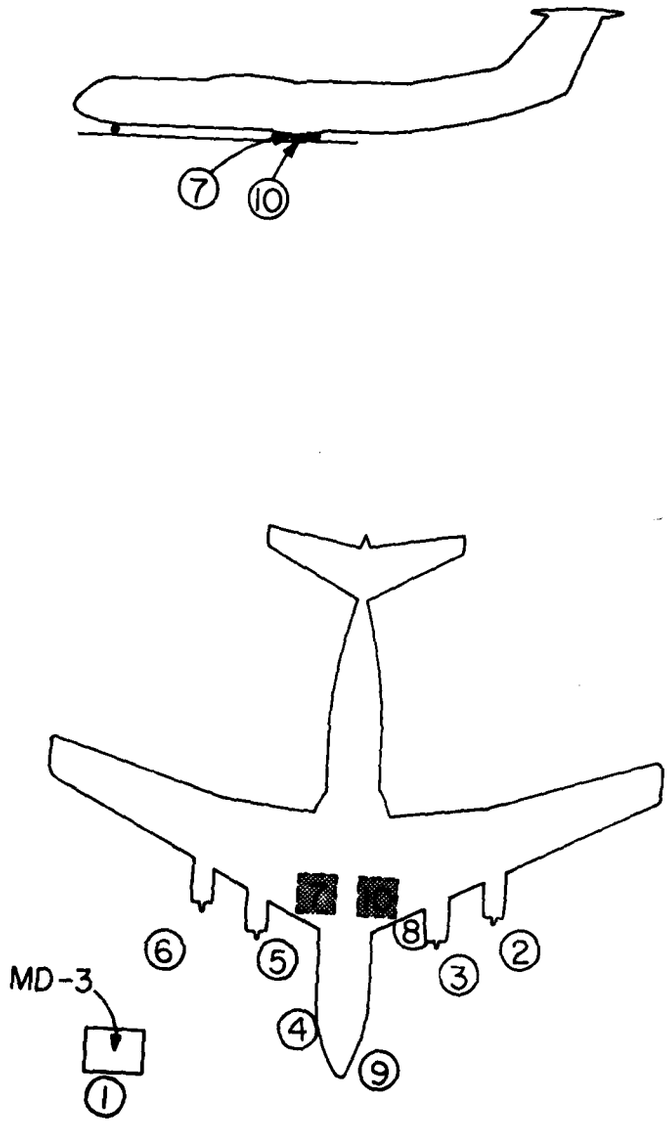


Figure 1. Near-Field Measurement Locations at Wright-Patterson AFB OH

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during a one hour test period, thus keeping similar meteorological conditions throughout the test. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 75 meter radius semicircle used in surveying the TF33-P-7 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the inboard engines' exhaust-nozzle exits. The ground runup area did not have a blast deflector; therefore, the engines' exhausts were in a "free-flow" condition.

Table 4 provides cockpit readouts of some engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the C-141A aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure which describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

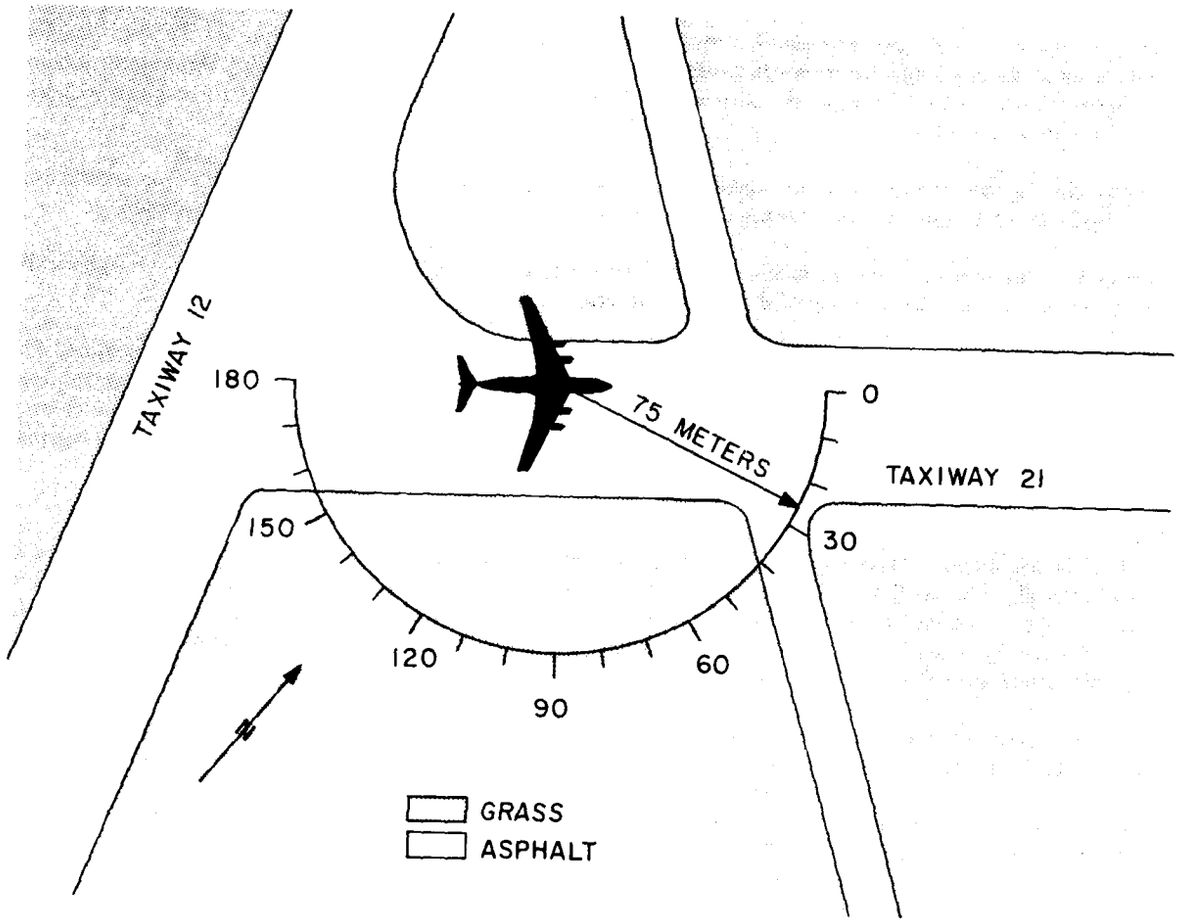


Figure 2. Far-Field Measurement Locations at Wright-Patterson AFB OH

Estimates of noise characteristics for intermediate power settings (e.g., 88% engine) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

No data are presented at the 170 and 180 degree locations at idle power, 150 through 180 degree locations at 70% runup power nor 160 through 180 degree locations for military power because of turbulent air flow behind the aircraft. A-weighted levels at the 170 and 180 degree locations for idle power are 0 to 5 dBA lower than the 160 degree data. Typical A-weighted levels at the missing angles for the two higher power settings are 5 to 10 dBA below the level of the last measured angle.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background electronic noise were generally not significant because the levels were so low (e.g., Table 5 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST AP-027-001
RUN 01
23 MAY 79
PAGE F1

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
GROUND CREW

NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 1/A	2/C	3/D	4/D	5/E	6/F	7/B	8/F	8/G	9/F	10/B
25	78<	80	82	76<	77<	62	83	95	112	80	80
31.5	81	82	83	83	82	87	82	92	111	84	84
40	88	83	87	91	86	86	85	95	113	86	86
50	93	86	90	99	88	87	89	95	121	88	85
63	96	88	92	101	89	91	89	96	122	88	80<
80	91	87	91	93	92	90	88	96	119	88	79
100	101	91	92	101	88	88	89	97	126	91	86
125	106	95	95	105	88	87	91	99	127	89	85
160	96	90	94	95	90	85	93	97	126	90	83
200	97	92	95	94	93	87	94	97	121	87	86
250	103	96	99	100	95	94	99	101	122	88	90
315	90	96	99	97	95	97	94	102	121	91	85
400	89	99	103	94	101	100	95	105	121	97	83
500	89	99	103	91	101	99	92	104	120	97	83
630	90	99	103	93	101	100	93	106	120	98	83
800	91	101	105	91	103	101	93	106	123	100	87
1000	94	103	106	91	105	102	92	105	121	101	87
1250	88	100	104	89	101	99	88	105	118	98	76
1600	88	102	106	91	104	102	91	103	117	100	80
2000	91	102	107	93	104	103	93	104	117	102	82
2500	85	100	103	87	101	99	90	105	116	98	77
3150	84	99	105	88	102	101	96	106	121	101	77
4000	84	99	103	87	101	99	93	105	123	98	79
5000	81	98	102	85	99	98	91	105	118	97	78
6300	79	96	99	83	97	95	90	102	120	95	76
8000	74	95	99	81	96	94	89	102	121	93	74
10000	71	95	104	87	92	91	95	109	119	95	81
OVERALL	110	112	116	110	113	112	107	117	136	110	98

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

2 OCTAVE BAND

OMEGA 3.2
TEST AP-027-001
RUN 01

23 MAY 79

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
GROUND CREW

OPERATION:

NEAR FIELD NOISE LEVELS

FREQ (HZ)	LOCATION/CONDITION 1/A	2/C	3/D	4/D	5/E	6/F	7/B	8/F	8/G	9/F	10/B
31.5	89	86	89	91	87	90	88	99	117	88	89
63	98	92	96	103	95	94	93	101	125	93	87
125	107	97	98	107	94	91	96	102	131	95	90
250	104	100	103	102	99	99	101	105	126	94	92
500	94	104	108	98	106	104	98	110	125	102	88
1000	96	106	110	95	108	106	96	110	126	104	90
2000	94	106	110	95	108	106	96	109	121	105	85
4000	88	103	108	92	105	104	99	110	126	103	82
8000	80	100	106	89	100	98	97	110	125	99	82
OVERALL	110	112	116	110	113	112	107	117	136	110	98

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST AP-027-001
RUN 01
23 MAY 79
PAGE H1

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
GROUND CREW

NEAR FIELD NOISE LEVELS

OPERATION:

	LOCATION/CONDITION										
	1/A	2/C	3/D	4/D	5/E	6/F	7/B	8/F	8/G	9/F	10/B
HAZARD/PROTECTION											
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR											
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR											
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)											
NO PROTECTION											
OASLC	110	112	115	110	113	112	106	117	135	110	97
OASLA	101	112	116	102	113	112	104	116	132	110	94
T	25	3.8	P	21	3.2	3.8	15	P	P	5	85
MINIMUM QPL EAR MUFFS											
OASLA*	87	86	89	87	87	85	82	92	112	84	73
T	285	339	202	285	285	404	679	120	3.8	480	960
AMERICAN OPTICAL 1700 EAR MUFFS											
OASLA*	83	80	84	83	81	79	78	87	107	78	69
T	571	960	480	571	807	960	960	285	9	960	960
V-51R EAR PLUGS											
OASLA*	78	85	89	78	86	85	78	90	116	83	70
T	960	404	202	960	339	404	960	170	11	571	960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS											
OASLA*	66	72	75	66	73	71	64	77	93	70	56
T	960	960	960	960	960	960	960	960	191	960	960
H-133 GROUND COMMUNICATION UNIT											
OASLA*	77	84	88	77	86	84	77	89	105	83	67
T	960	480	240	960	339	480	960	202	13	571	960
COMMUNICATION											
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)											
PSIL	95	105	109	96	107	105	97	109	124	104	88
ANNOYANCE											
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)											
TONE CORRECTION (C IN DB)											
PNLT	117	125	129	118	126	125	121	131	148	125	108
C	2	1	0	1	0	0	2	1	1	1	1

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4

TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS

C-141A Aircraft, Ground Runups, Wright-Patterson AFB, OH
14 August 1974
Tail #612775

Aircraft Engine Operation	
Idle	All Engines
	55 % RPM NC (Core Speed)
	28 % RPM NF (Fan Speed)
	310 C EGT (Exhaust Gas Temperature)
	1.04 EPR (Engine Pressure Ratio)
	1100 LBS/HR FF (Fuel Flow)
70% RPM	All Engines
	87 % RPM NC
	70 % RPM NF
	345 C EGT
	1.27 EPR
	4100 LBS/HR FF
Military Power	All Engines
	98 % RPM NC
	95 % RPM NF
	500 C EGT
	1.85 EPR
	10,000 LBS/HR FF
Meteorology	
Temperature	25.6 C
Bar Pressure	0.743 M Hg
Rel Humidity	60 %
Wind — Speed	2.1 M/Sec (4 Kts)
— Direction	100 Deg

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	66<	65<	65<	64<	66<	65<	66<	70	67<	68<	70	69	68<	70	71	70	71		
31.5	65<	66<	68<	67<	66<	68<	68<	68<	70	71	69	68<	67<	68<	70	70	70		
40	70<	69<	69<	70<	68<	69<	70<	70<	71<	72	73	73	73	71<	71<	72	69<		
50	71	70	71	70	71	71	69	70	69	69	70	71	70	70	69	70	70		
63	76	74<	75	76	77	75	76	75	73<	72<	74<	74<	73<	69<	70<	70<	68<		
80	79	77	77	77	75	76	76	77	75	73	73	74	71	72	71	71	69<		
100	79	78	80	78	78	75	76	79	75	73	73	75	73	72	73	72	69<		
125	77	77	77	76	74	74	74	77	74	73	72	73	71	73	72	72	70		
160	78	79	78	76	76	76	76	78	73	73	73	73	73	72	71	71	68		
200	79	79	78	77	75	75	80	77	72	72	72	72	72	72	70	69	69		
250	81	80	80	78	77	77	82	78	74	73	72	72	73	73	72	71	71		
315	83	84	82	82	79	77	80	76	74	73	73	72	73	72	72	71	71		
400	85	86	85	83	79	79	80	77	74	75	72	71	71	72	70	71	72		
500	85	86	85	83	79	78	80	76	74	75	72	71	71	70	70	71	70		
630	86	86	85	83	77	77	79	75	75	74	71	74	74	72	73	73	71		
800	88	88	86	83	78	77	79	75	76	75	71	75	76	74	74	73	73		
1000	89	89	89	86	81	81	81	78	78	76	71	76	76	76	75	73	73		
1250	85	86	86	84	80	80	80	76	75	74	69	74	75	75	73	71	71		
1600	91	92	91	88	84	84	84	80	78	78	74	77	79	80	79	75	75		
2000	91	91	90	87	84	85	85	81	79	80	78	81	82	85	85	80	80		
2500	88	88	87	84	80	81	80	77	74	75	71	76	78	78	75	73	72		
3150	92	93	92	87	83	84	82	82	78	79	77	81	82	81	79	76	76		
4000	87	88	88	84	81	83	81	79	74	76	74	79	80	79	77	74	74		
5000	85	85	85	82	79	81	78	77	73	74	72	77	78	77	74	71	71		
6300	82	82	81	79	77	78	75	74	71	72	70	75	77	75	72	69	69		
8000	78	79	78	75	73	74	71	70	66	68	67	74	75	73	71	67	66		
10000	74	74	73	70	69	70	66	66	64	64	64	71	71	69	67	63	63		
OVERALL	100	100	99	96	93	93	93	91	89	89	87	89	90	90	89	87	86		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	80	81	78	80	79	82	85	84	83	83									
31.5	78	80	79	81	81	82	84	84	84	85									
40	82	83	83	82	83	85	84	86	86	88									
50	82	82	83	82	82	83	85	86	87	88	91	92	94	98	102				
63	85	85	84	83	86	86	87	87	88	90	90	93	95	99	103				
80	86	86	85	86	87	88	88	88	90	91	90	93	94	100	103				
100	87	86	86	86	87	87	88	89	90	91	91	93	96	99	102				
125	87	87	86	87	86	86	87	87	89	90	92	94	95	98	100				
160	88	88	87	86	85	86	87	87	88	90	92	93	94	96	97				
200	87	87	86	86	85	85	85	85	88	89	90	91	92	94	92				
250	86	87	89	86	85	85	85	85	87	88	88	89	91	94	92				
315	87	86	86	85	82	81	82	81	82	83	85	86	88	91	88				
400	86	86	87	85	82	82	82	82	81	82	81	83	87	87	85				
500	86	87	87	85	82	81	82	82	80	82	80	82	84	82	81				
630	89	89	88	85	82	82	82	83	82	84	82	84	84	81	80				
800	90	90	89	87	84	83	83	83	82	84	82	85	83	79	79				
1000	93	94	95	95	93	92	92	89	88	86	83	84	84	79	79				
1250	104	104	103	100	97	96	95	93	91	89	85	86	86	80	80				
1600	99	98	99	99	97	96	95	94	90	89	87	87	87	81	81				
2000	99	98	97	97	93	94	93	93	91	89	90	89	89	83	81				
2500	103	102	108	114	104	100	100	99	99	97	99	100	102	92	90				
3150	100	100	102	106	100	98	97	97	95	93	96	97	98	92	91				
4000	101	101	100	100	98	97	97	97	95	93	97	96	95	89	87				
5000	102	102	102	106	100	100	101	99	99	96	98	97	98	90	89				
6300	99	99	99	101	98	97	97	97	95	93	95	94	94	87	86				
8000	96	97	97	101	96	96	96	96	94	93	97	96	96	89	87				
10000	93	93	94	97	93	91	91	92	89	88	93	92	92	85	83				
OVERALL	111	111	112	116	109	107	108	107	106	105	107	107	108	107	110				

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	86	85	87	88	87	89	91	86	92	94	96	96	100	103	108	109			
31.5	87	86	89	88	89	90	91	87	95	93	95	97	100	106	111	110			
40	90	89	90	90	91	92	93	90	96	96	97	100	105	111	114	112			
50	90	88	89	91	91	93	93	90	96	96	98	102	106	113	117	113			
63	92	92	91	92	95	96	98	93	98	100	101	103	109	116	119	114			
80	96	94	94	95	95	96	98	92	99	102	101	104	110	117	121	115			
100	99	98	98	98	99	98	98	94	100	103	104	106	113	120	123	118			
125	101	101	101	98	98	99	98	94	101	103	104	108	112	120	124	120			
160	98	99	99	98	98	100	98	95	101	103	105	106	114	118	122	119			
200	98	99	98	99	98	99	98	93	101	102	104	106	112	119	118	118			
250	99	99	100	97	97	96	96	92	98	101	103	106	112	118	117	116			
315	99	99	99	98	95	95	95	91	98	99	100	104	109	113	115	113			
400	98	98	97	97	95	95	93	89	96	98	98	101	107	110	112	111			
500	97	97	97	96	95	93	94	89	95	96	96	100	104	107	109	109			
630	96	95	96	96	95	93	94	90	97	97	97	102	104	106	107	108			
800	94	94	95	95	94	93	94	90	97	97	98	102	103	104	104	104			
1000	95	94	95	95	95	94	94	91	98	98	99	102	102	103	102	101			
1250	94	95	94	95	96	95	96	91	98	99	98	101	102	102	100	98			
1600	96	96	99	103	101	98	100	94	99	100	99	101	102	101	98	95			
2000	96	98	100	99	97	95	95	91	96	97	99	100	101	100	97	93			
2500	101	100	99	98	97	95	96	91	98	98	98	100	99	97	95	91			
3150	100	99	100	102	101	100	101	96	102	103	104	105	103	100	97	94			
4000	101	100	101	107	104	103	105	98	103	105	106	109	106	102	98	96			
5000	97	99	97	100	98	97	98	91	98	99	99	100	98	96	95	91			
6300	96	96	97	98	97	96	97	92	99	100	101	102	97	95	92	89			
8000	94	93	94	96	95	93	96	89	97	98	101	102	99	96	93	90			
10000	90	90	90	92	92	90	92	87	94	95	98	99	96	94	90	87			
OVERALL	111	111	111	113	111	111	111	106	113	114	115	118	122	127	130	127			

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 6

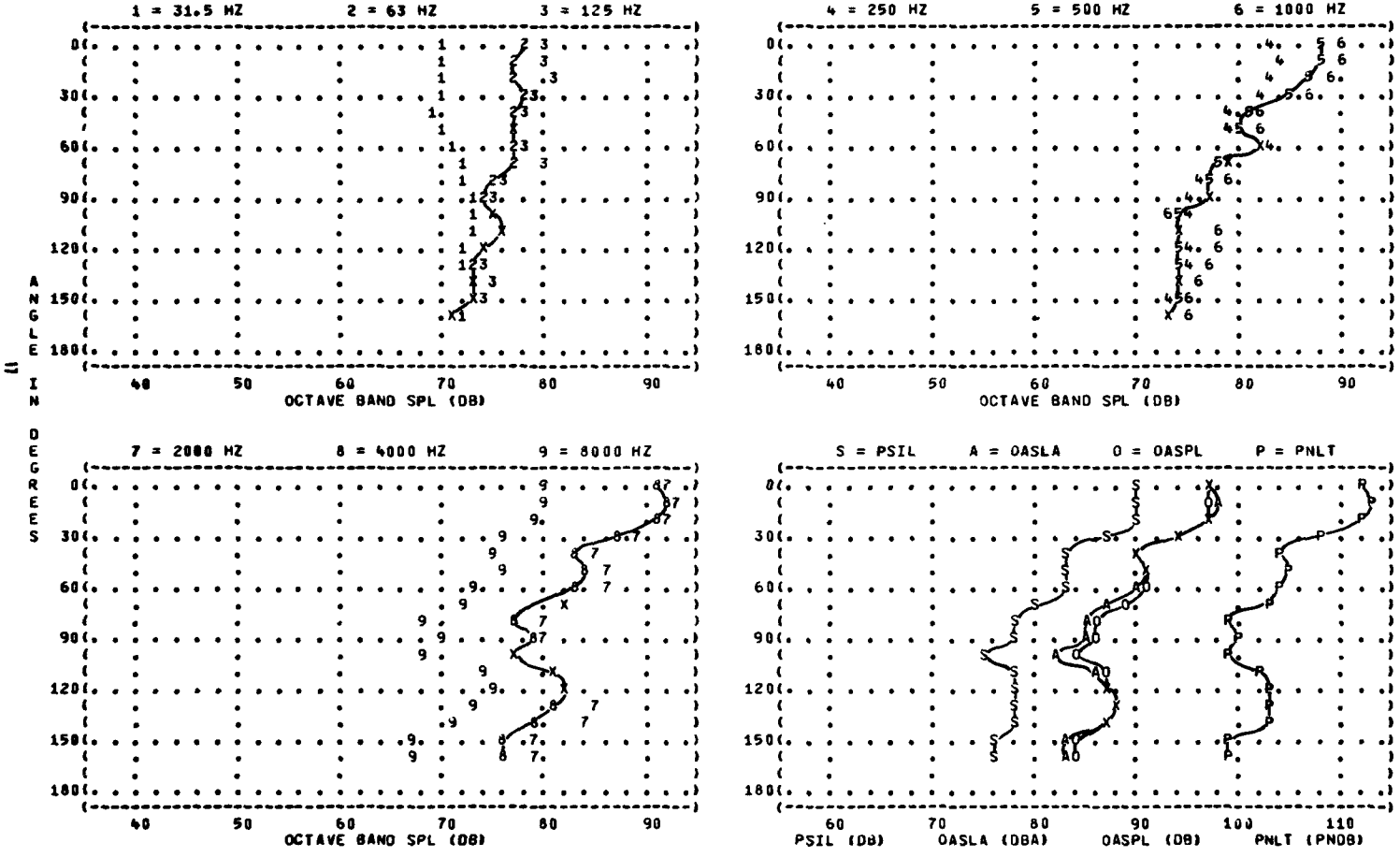


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:

87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-025
RUN 02

06 MAY 75

PAGE 6

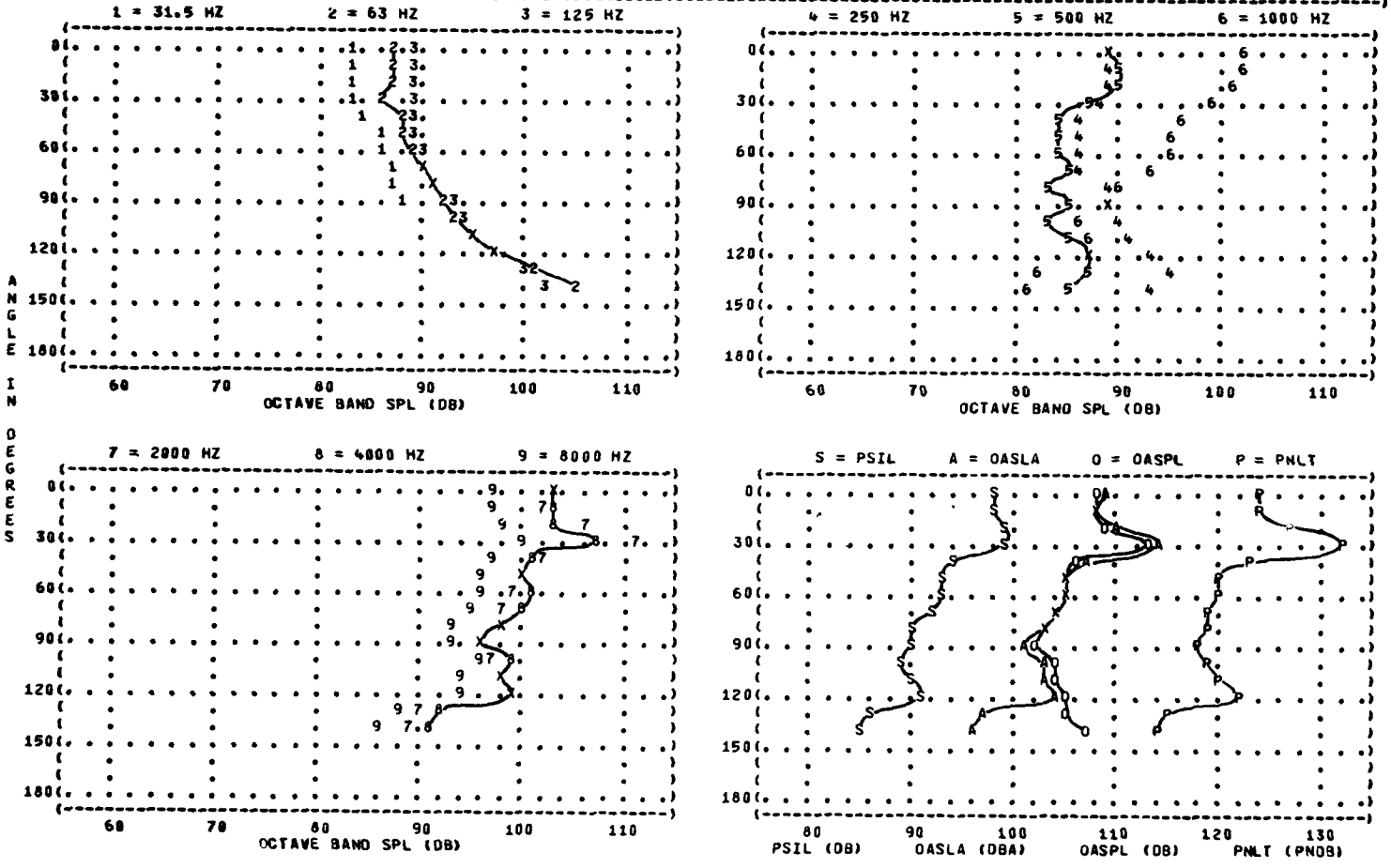


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
90% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
ONEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 6

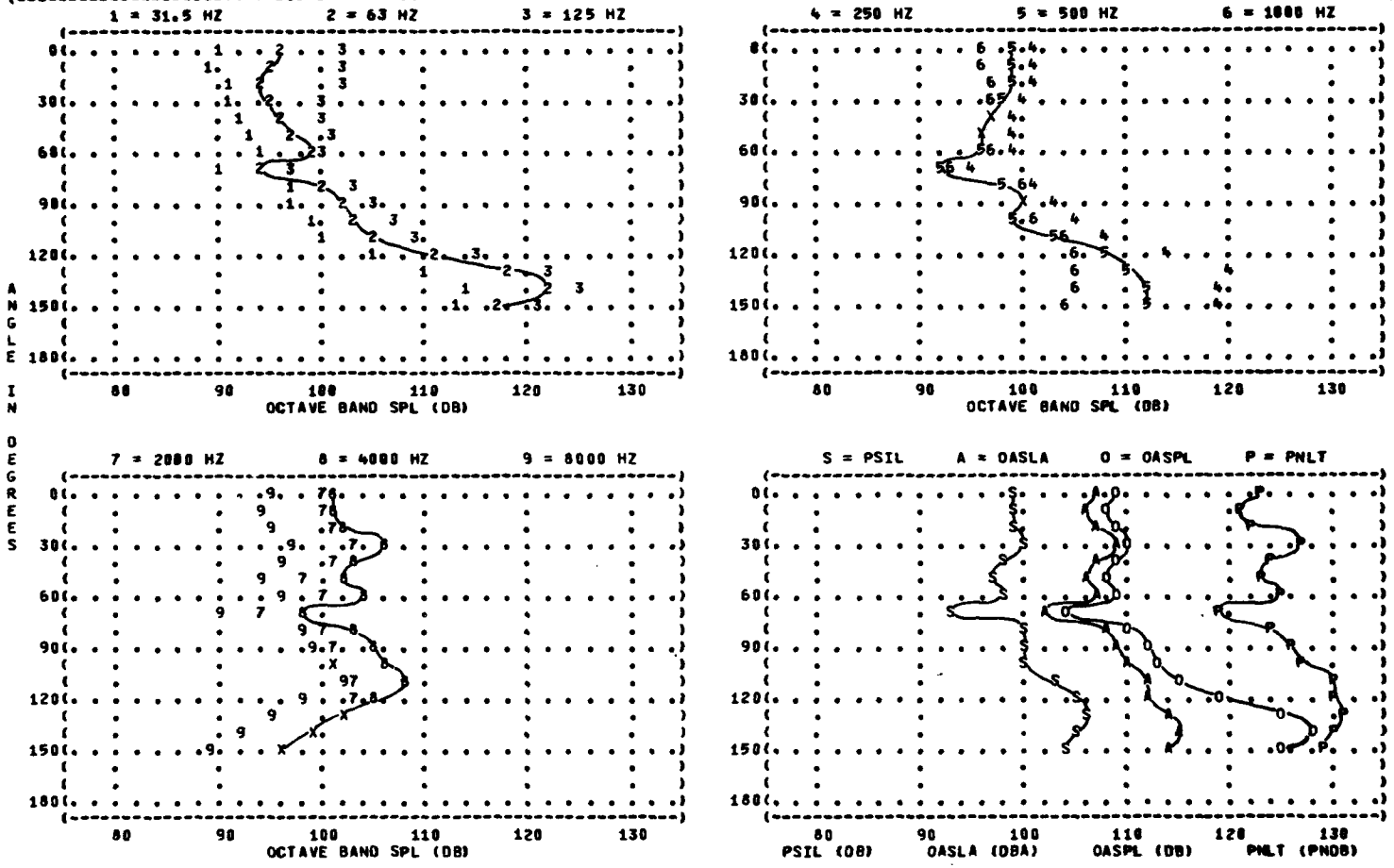


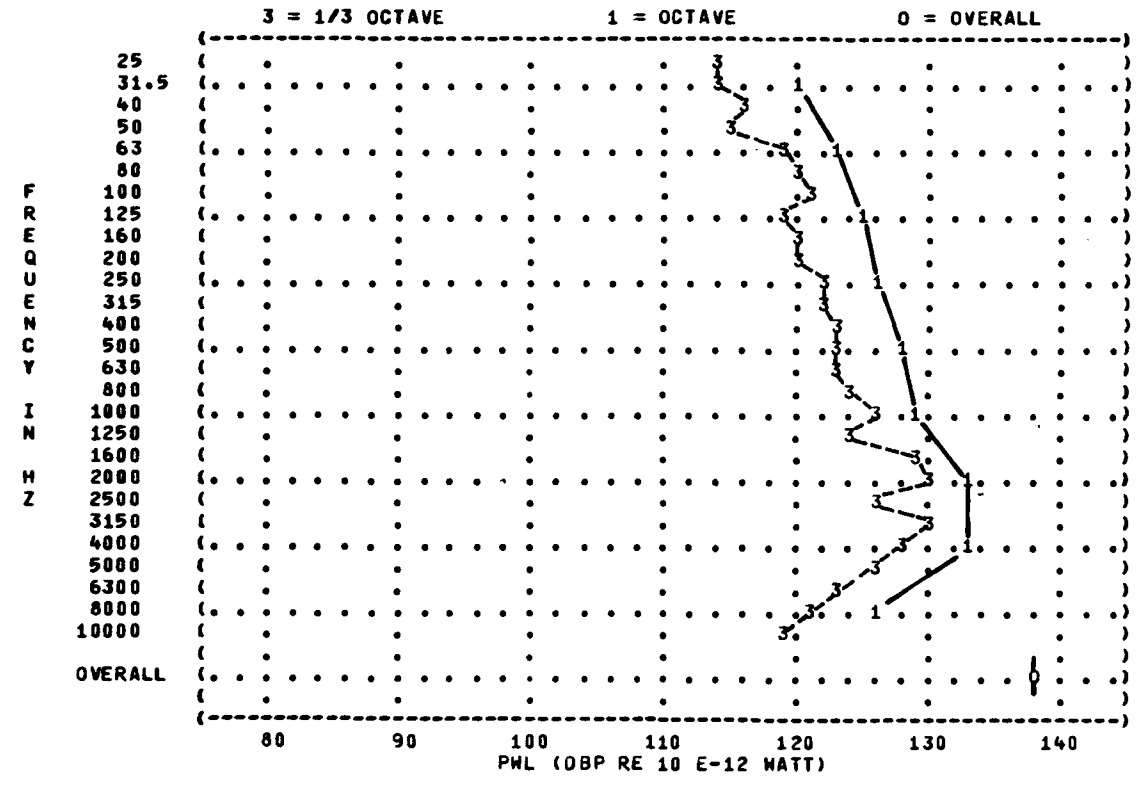
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 3

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %



FREQUENCY	PWL 1/3 OCTAVE	PWL OCTAVE
25	113.7	
31.5	114.1	119.7
40	116.5	
50	115.5	
63	119.3	123.4
80	119.9	
100	120.8	
125	119.2	124.8
160	119.8	
200	120.2	
250	121.8	126.1
315	121.8	
400	123.0	
500	123.0	127.7
630	122.8	
800	123.8	
1000	125.9	129.5
1250	124.1	
1600	128.7	
2000	129.9	133.2
2500	125.7	
3150	130.1	
4000	127.5	132.9
5000	125.5	
6300	123.4	
8000	121.4	126.4
10000	119.0	
OVERALL		136.4

FIGURE: ACOUSTIC POWER LEVEL (PWL)

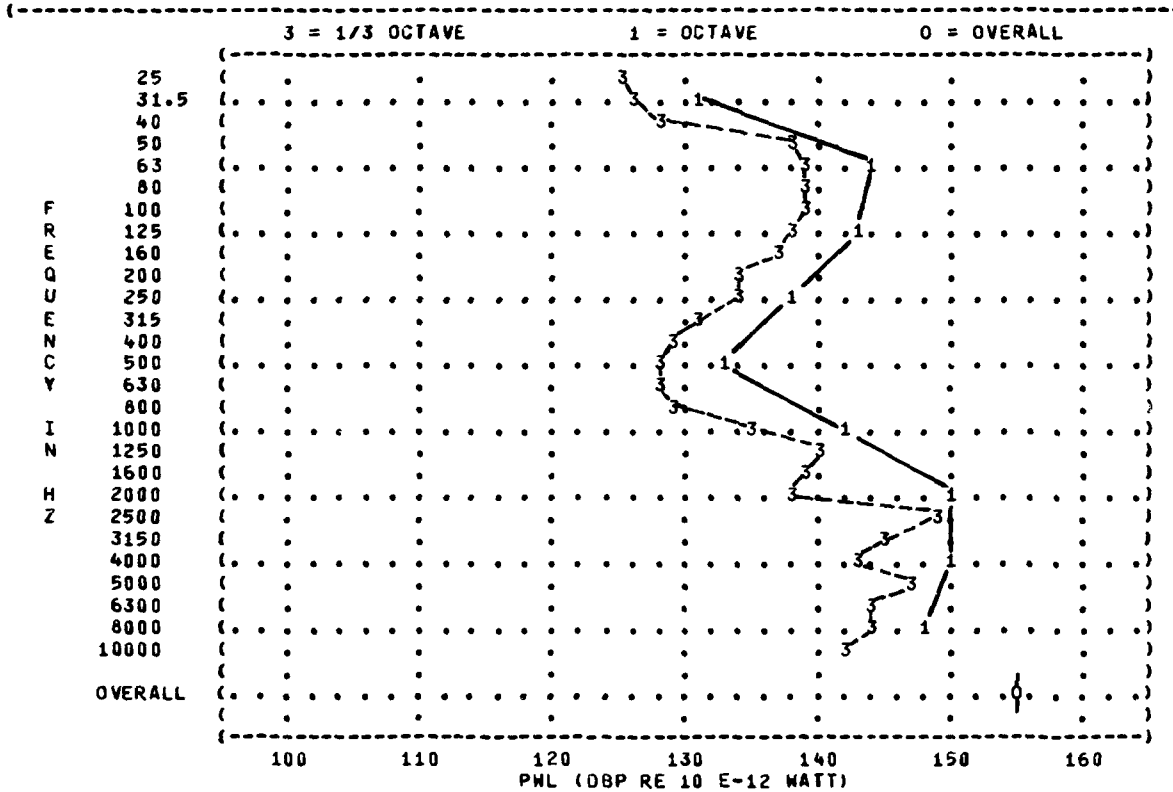
4

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 3



	PWL	
	1/3 OCTAVE	OCTAVE
25	125.3	
31.5	12[illegible].8	131.4
40	128.1	
50	138.0	
63	139.4	143.8
80	139.4	
100	139.2	
125	137.8	142.7
160	136.5	
200	134.4	
250	133.8	138.0
315	130.7	
400	128.9	
500	127.5	133.1
630	128.5	
800	129.0	
1000	134.8	141.6
1250	140.3	
1600	139.1	
2000	137.9	150.1
2500	149.4	
3150	144.7	
4000	143.3	149.8
5000	146.5	
6300	143.7	
8000	144.5	148.2
10000	141.8	
OVERALL		155.2

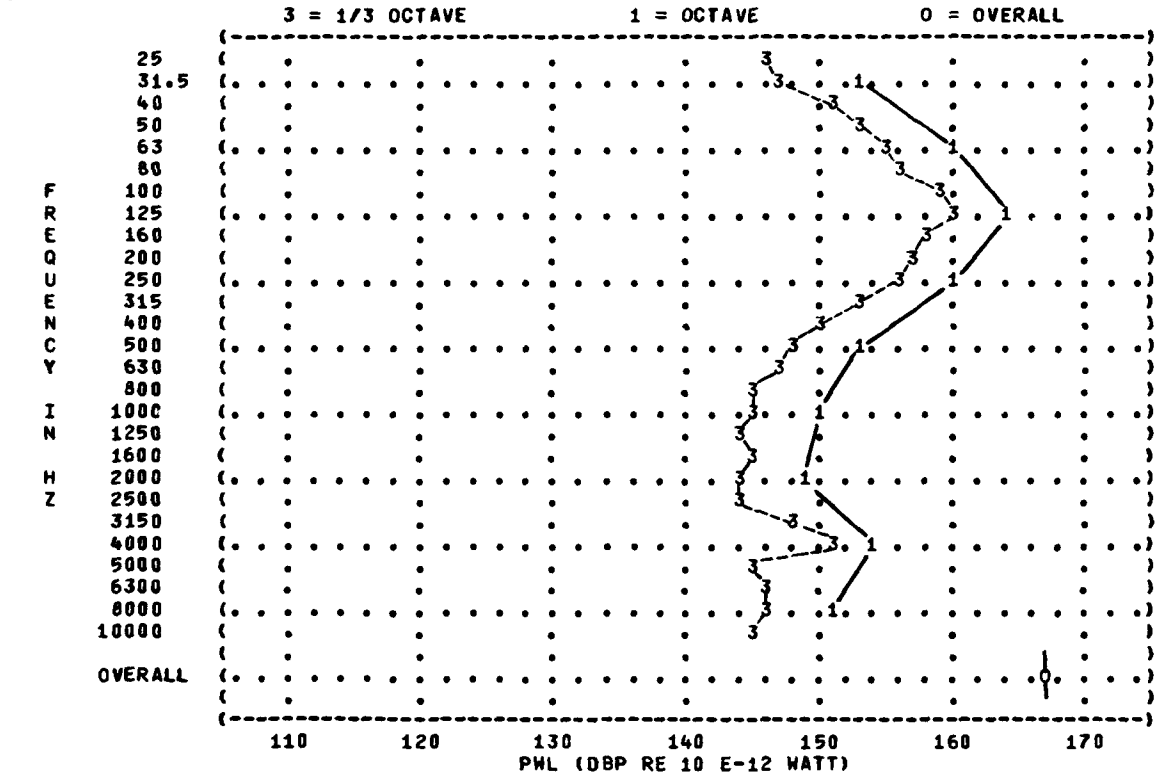
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 3

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %



1/3 OCTAVE	PWL OCTAVE
145.6	
147.2	153.2
150.8	
153.0	
155.1	159.8
156.3	
158.8	
159.8	163.8
158.2	
157.0	
155.6	160.2
152.8	
150.1	
147.6	153.2
146.8	
145.5	
144.8	149.6
144.3	
145.4	
143.8	149.1
143.6	
148.4	
151.4	153.8
145.0	
146.2	
146.4	150.7
145.0	
	167.3

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-02[illegible]
RUN 01
06 MAY 75
PAGE 4

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-2	-3	-3	-4	-2	-3	-2	1	-1	0	1	1	-1	1	2	1	3		
31.5	-3	-2	-1	-2	-3	-1	-1	-0	1	2	1	-1	-2	-0	1	1	1		
40	-1	-2	-2	-1	-3	-2	-1	-1	-0	1	2	2	2	0	-0	1	-2		
50	1	0	1	0	1	1	-1	0	-1	-1	0	1	0	0	-1	0	-0		
63	2	1	1	2	3	1	2	1	-1	-1	0	0	-1	-5	-4	-3	-6		
80	4	2	3	3	0	1	2	3	0	-1	-1	-0	-3	-2	-3	-3	-5		
100	3	2	4	2	2	-0	1	3	-0	-2	-2	-0	-3	-3	-2	-3	-6		
125	3	3	3	2	0	0	0	3	-0	-1	-2	-1	-3	-1	-2	-2	-4		
160	3	4	3	2	1	1	2	3	-1	-2	-2	-2	-2	-3	-3	-4	-6		
200	4	4	4	2	0	-0	5	3	-2	-3	-3	-3	-3	-3	-4	-5	-6		
250	4	4	3	2	0	1	6	2	-2	-3	-4	-5	-4	-3	-4	-5	-6		
315	6	7	6	5	2	1	3	-1	-3	-4	-3	-5	-4	-4	-5	-6	-5		
400	8	8	7	6	1	2	2	-0	-3	-3	-5	-7	-7	-5	-7	-6	-6		
500	8	9	8	6	1	1	3	-2	-3	-3	-6	-6	-7	-7	-7	-6	-7		
630	9	9	8	5	0	-1	2	-2	-2	-3	-6	-3	-3	-6	-4	-4	-6		
800	10	10	8	5	0	-1	1	-3	-2	-3	-7	-3	-2	-4	-4	-5	-5		
1000	9	9	8	6	1	1	1	-3	-2	-4	-9	-4	-5	-4	-6	-7	-7		
1250	7	7	8	6	2	1	1	-2	-4	-4	-9	-4	-4	-4	-5	-8	-7		
1600	9	9	8	5	2	2	2	-3	-5	-5	-9	-5	-4	-2	-3	-8	-8		
2000	7	7	6	3	0	2	1	-3	-5	-4	-6	-2	-2	2	1	-4	-4		
2500	9	9	8	5	1	2	0	-2	-5	-4	-8	-3	-2	-1	-5	-7	-7		
3150	9	10	9	4	-0	1	-1	-1	-6	-4	-6	-2	-1	-3	-5	-7	-7		
4000	7	8	8	4	1	2	0	-2	-6	-4	-6	-2	-1	-2	-3	-6	-6		
5000	7	7	7	4	1	3	0	-1	-5	-4	-6	-1	-0	-1	-4	-7	-7		
6300	6	7	6	3	1	3	0	-1	-5	-3	-5	-0	1	-1	-3	-6	-7		
8000	6	6	6	2	1	1	-1	-2	-6	-4	-5	1	3	1	-1	-5	-6		
10000	6	6	5	2	1	1	-2	-2	-5	-4	-4	2	3	1	-2	-5	-5		
OCTAVE																			
31.5	-2	-2	-2	-2	-3	-2	-1	0	0	1	1	1	0	1	1	1	0		
63	3	1	2	2	2	1	2	2	-0	-1	-0	0	-2	-2	-3	-3	-4		
125	3	3	4	2	2	0	1	3	-0	-2	-2	-1	-2	-2	-2	-3	-6		
250	5	6	5	4	1	1	5	1	-2	-3	-3	-4	-3	-3	-4	-5	-6		
500	8	9	8	6	1	1	2	-1	-3	-3	-6	-5	-5	-6	-6	-5	-6		
1000	9	9	8	6	1	1	1	-3	-3	-4	-8	-4	-4	-4	-5	-6	-6		
2000	8	8	7	4	1	2	1	-3	-5	-4	-7	-3	-2	0	-1	-6	-6		
4000	8	9	8	4	0	2	-0	-1	-6	-4	-6	-2	-1	-2	-4	-7	-7		
8000	6	6	6	3	1	2	-1	-2	-5	-4	-5	1	2	0	-3	-6	-6		
OVERALL	8	8	7	4	1	1	1	-1	-3	-3	-5	-3	-2	-2	-3	-5	-6		

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:

C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:

87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:

TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	0	1	-2	-0	-1	2	5	4	3	3									
31.5	-2	-1	-1	1	0	2	3	3	4	4									
40	-1	-0	0	-1	0	2	1	3	3	5									
50	-11	-11	-10	-10	-11	-10	-8	-7	-6	-5	-2	-1	1	5	9				
63	-9	-9	-10	-11	-8	-8	-7	-7	-6	-4	-4	-1	1	5	9				
80	-8	-8	-9	-8	-7	-6	-6	-6	-4	-3	-4	-1	0	6	9				
100	-7	-7	-7	-8	-7	-6	-6	-5	-4	-3	-2	-1	2	5	9				
125	-6	-5	-6	-6	-6	-7	-6	-5	-4	-3	-1	1	2	5	7				
160	-3	-3	-4	-5	-6	-5	-4	-4	-3	-1	1	2	3	5	6				
200	-2	-2	-3	-3	-4	-4	-4	-4	-1	-0	1	2	3	5	3				
250	-2	-1	0	-2	-3	-4	-4	-3	-1	-1	-0	1	3	6	3				
315	1	1	1	-0	-3	-4	-4	-4	-3	-2	-0	1	3	6	3				
400	2	2	4	2	-2	-1	-1	-2	-3	-1	-3	-1	3	4	1				
500	4	5	5	3	-0	-1	-0	0	-2	0	-2	-0	2	0	-1				
630	6	6	5	2	-1	-1	-1	-0	-1	1	-1	1	1	-2	-3				
800	7	7	6	3	1	-1	-1	-0	-1	0	-1	1	-0	-4	-4				
1000	4	5	6	6	4	3	3	0	-1	-3	-6	-5	-5	-10	-10				
1250	10	10	9	6	3	1	1	-1	-4	-5	-9	-8	-9	-15	-15				
1600	6	5	6	6	4	3	2	1	-3	-4	-6	-6	-6	-12	-12				
2000	7	6	6	5	2	3	2	1	-1	-2	-2	-2	-3	-9	-10				
2500	0	-1	5	11	1	-3	-3	-4	-4	-6	-4	-3	-1	-11	-13				
3150	2	2	4	8	2	0	-1	-1	-3	-5	-2	-1	0	-6	-7				
4000	5	5	4	4	2	1	1	1	-1	-3	1	-0	-1	-7	-9				
5000	3	3	3	7	1	1	2	0	-0	-3	-1	-2	-1	-9	-10				
6300	3	4	3	5	3	2	2	1	-1	-2	-1	-1	-1	-8	-10				
8000	1	1	2	6	1	0	0	0	-2	-2	2	1	0	-6	-9				
10000	1	2	3	6	2	-0	0	0	-2	-3	2	0	0	-6	-8				
OCTAVE																			
31.5	-1	-0	-1	-0	0	2	3	3	3	5									
63	-9	-9	-9	-10	-8	-8	-7	-6	-5	-4	-3	-1	1	5	9				
125	-6	-5	-6	-6	-6	-6	-5	-5	-4	-2	-1	0	2	5	8				
250	-1	-1	-1	-2	-4	-4	-4	-4	-1	-1	0	1	3	5	3				
500	4	5	5	2	-1	-1	-1	-0	-2	0	-2	0	2	2	-0				
1000	9	9	8	6	3	2	1	-1	-3	-4	-7	-6	-7	-12	-12				
2000	2	1	5	10	1	-1	-2	-3	-3	-5	-4	-3	-2	-11	-12				
4000	3	3	4	7	2	1	1	0	-1	-4	-1	-1	-1	-7	-9				
8000	2	3	3	6	2	1	1	1	-1	-2	1	-0	-0	-7	-9				
OVERALL	3	2	4	8	1	-1	-1	-1	-2	-4	-2	-1	-0	-1	1				

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 26 C
BAR PRESS = .743 M HG
REL HUMID = 60 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-15	-15	-13	-12	-13	-11	-10	-14	-8	-7	-4	-4	0	3	8	9			
31.5	-15	-16	-13	-14	-13	-12	-11	-15	-7	-9	-7	-5	-2	4	9	8			
40	-15	-16	-16	-16	-14	-13	-13	-16	-9	-10	-8	-6	-0	6	9	7			
50	-18	-19	-18	-17	-17	-15	-15	-18	-11	-12	-9	-5	-2	6	10	6			
63	-18	-17	-19	-17	-15	-14	-12	-17	-12	-10	-9	-6	-1	6	10	4			
80	-15	-17	-17	-16	-16	-15	-13	-19	-12	-9	-10	-7	-1	6	10	4			
100	-15	-15	-15	-16	-15	-15	-15	-19	-13	-10	-10	-7	-1	6	9	5			
125	-14	-14	-14	-16	-17	-16	-16	-20	-14	-12	-11	-6	-2	5	10	5			
160	-14	-14	-14	-14	-15	-13	-15	-18	-12	-9	-8	-6	1	6	9	6			
200	-13	-13	-13	-13	-13	-13	-14	-18	-11	-9	-8	-6	1	8	6	7			
250	-11	-11	-10	-13	-13	-14	-14	-18	-12	-9	-7	-4	1	8	7	6			
315	-9	-8	-9	-10	-12	-13	-12	-17	-10	-8	-7	-3	2	6	8	6			
400	-7	-7	-7	-8	-10	-10	-11	-15	-9	-6	-7	-3	2	6	7	7			
500	-5	-5	-5	-6	-7	-9	-8	-13	-7	-6	-6	-2	2	5	7	7			
630	-6	-6	-5	-6	-6	-8	-7	-11	-4	-4	-4	0	3	5	5	7			
800	-6	-6	-5	-5	-5	-7	-6	-9	-3	-2	-2	2	4	4	5	4			
1000	-4	-5	-4	-4	-4	-5	-5	-8	-1	-1	-0	3	3	4	3	2			
1250	-4	-4	-4	-3	-3	-4	-3	-7	-0	0	-0	3	3	4	2	-1			
1600	-3	-3	-1	4	1	-2	0	-6	-0	0	-1	1	2	1	-1	-4			
2000	-2	0	2	2	-1	-3	-2	-7	-1	-1	1	3	3	2	-0	-4			
2500	4	2	2	1	-0	-2	-1	-6	1	1	1	2	1	-0	-3	-6			
3150	-2	-2	-1	1	-0	-2	-1	-5	1	2	3	4	2	-1	-4	-8			
4000	-3	-4	-3	3	0	-1	1	-6	-1	1	2	5	2	-2	-6	-8			
5000	-0	1	-0	2	0	-0	0	-6	1	1	2	3	0	-1	-3	-6			
6300	-2	-2	-1	0	-1	-2	-1	-6	1	2	3	4	-1	-3	-6	-9			
8000	-4	-4	-4	-1	-2	-4	-2	-8	-0	1	4	4	1	-2	-5	-7			
10000	-4	-5	-4	-2	-3	-4	-2	-8	-0	1	4	5	1	-1	-4	-7			
OCTAVE																			
31.5	-15	-16	-15	-15	-14	-13	-11	-15	-8	-9	-7	-5	-1	5	9	7			
63	-16	-17	-18	-17	-16	-15	-13	-18	-12	-10	-9	-6	-1	6	10	5			
125	-14	-14	-14	-15	-16	-15	-16	-19	-13	-10	-9	-6	-1	6	9	6			
250	-11	-11	-11	-12	-13	-13	-14	-18	-11	-9	-7	-5	1	7	7	6			
500	-6	-6	-6	-7	-8	-9	-9	-13	-7	-6	-6	-2	2	5	7	7			
1000	-5	-5	-5	-4	-4	-5	-5	-8	-1	-1	-1	3	3	4	4	3			
2000	0	-0	1	3	0	-2	-1	-6	-0	0	1	2	2	1	-1	-5			
4000	-2	-2	-2	2	-0	-1	0	-6	-0	1	2	4	1	-2	-5	-8			
8000	-3	-3	-2	-1	-1	-3	-2	-7	0	1	4	4	1	-2	-5	-8			
OVERALL	-10	-11	-10	-9	-10	-11	-10	-15	-9	-7	-6	-4	0	6	9	5			

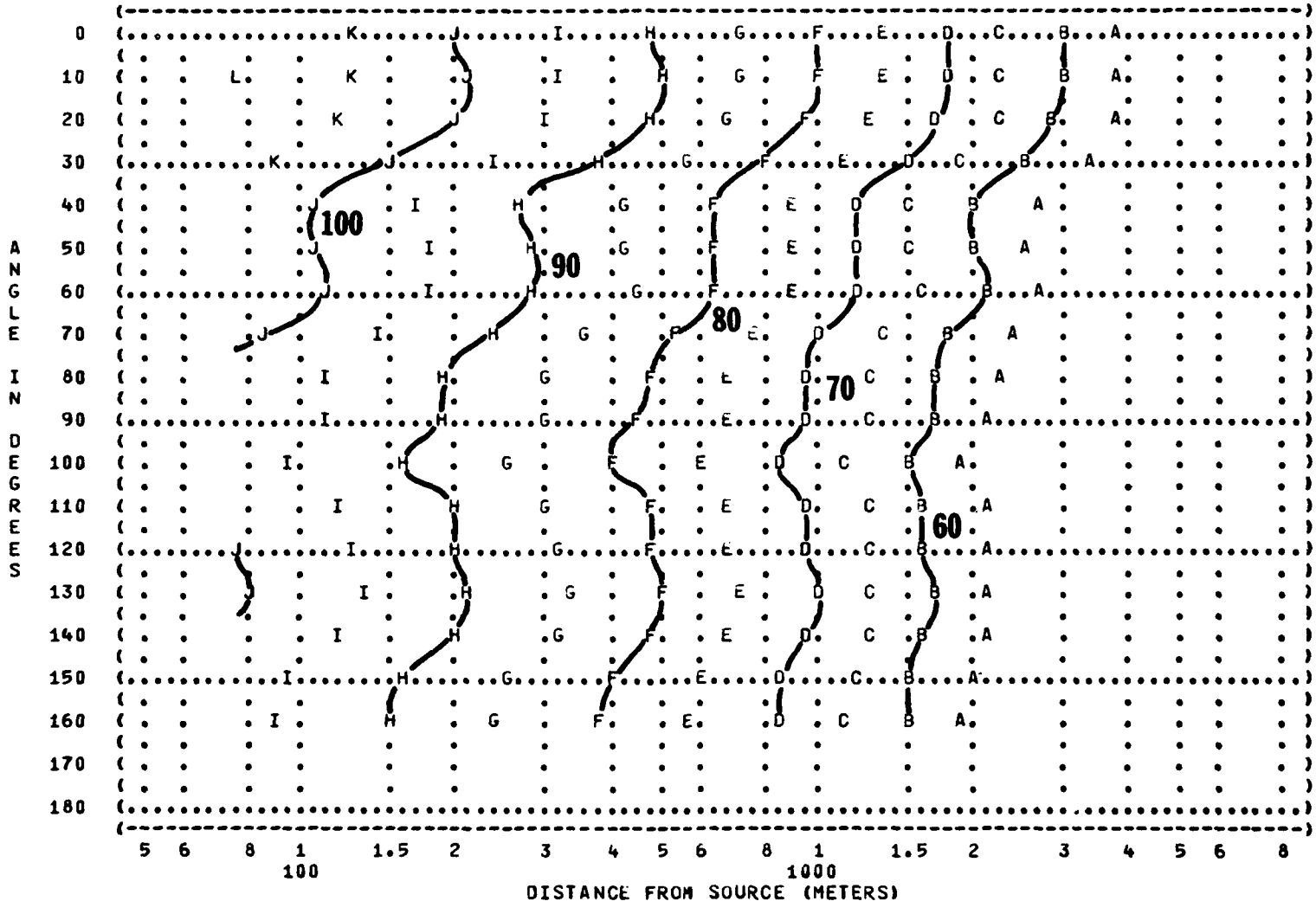
FIGURE 5: OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 13



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100

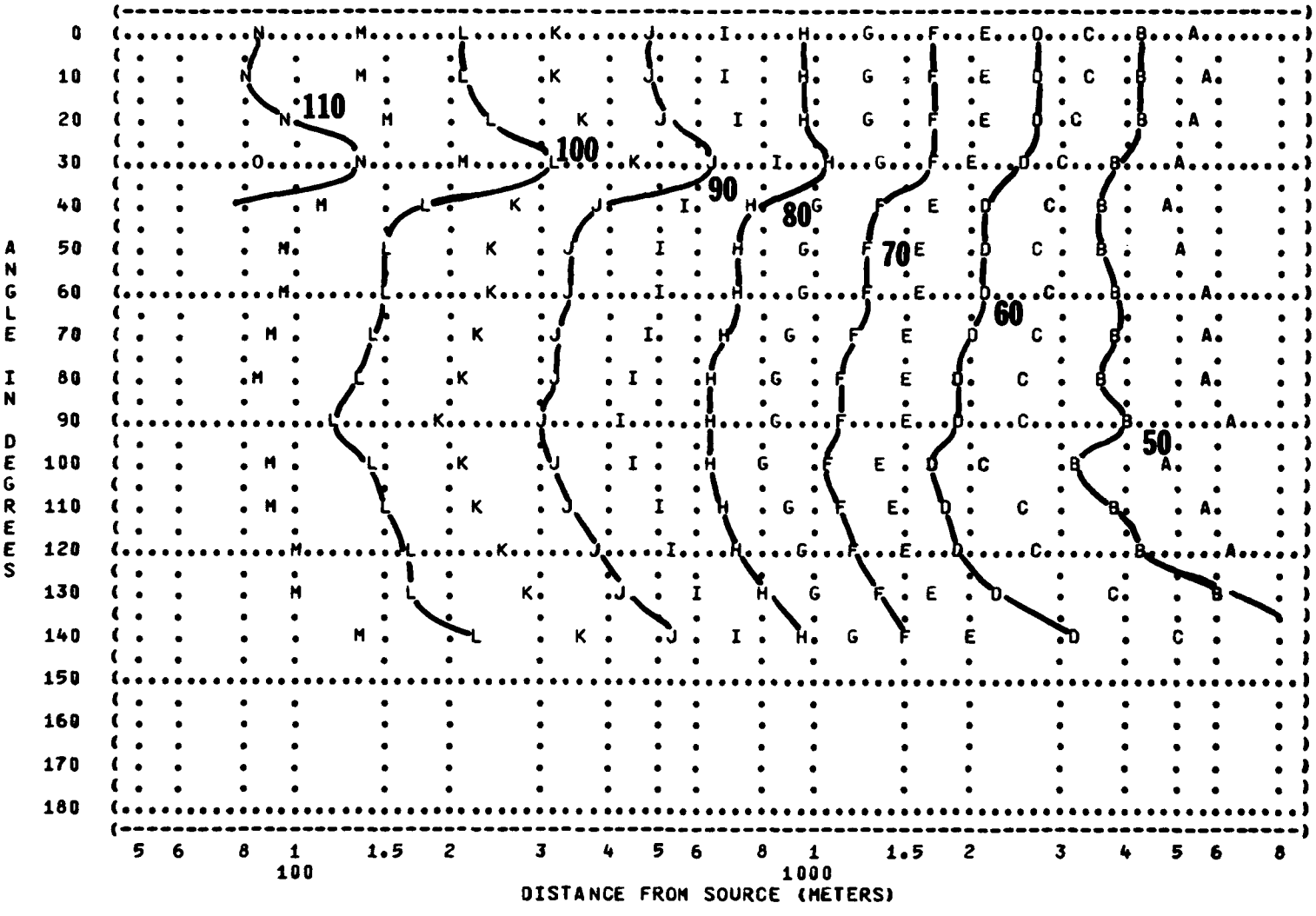
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
ONEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

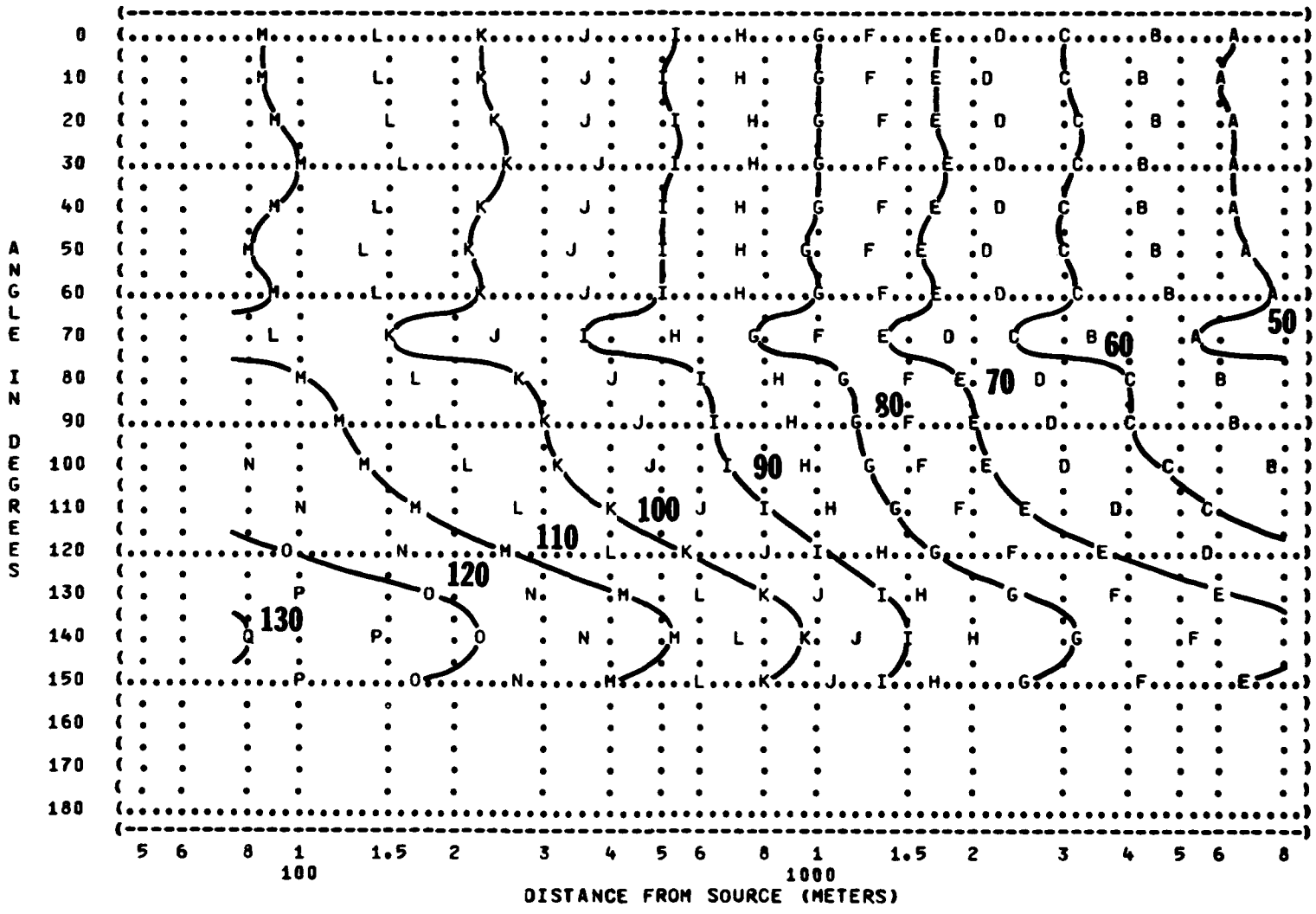
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	50
B	55
C	60
D	65
E	70
F	75
G	80
H	85
I	90
J	95
K	100
L	105
M	110
N	115
O	120
P	125
Q	130

FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

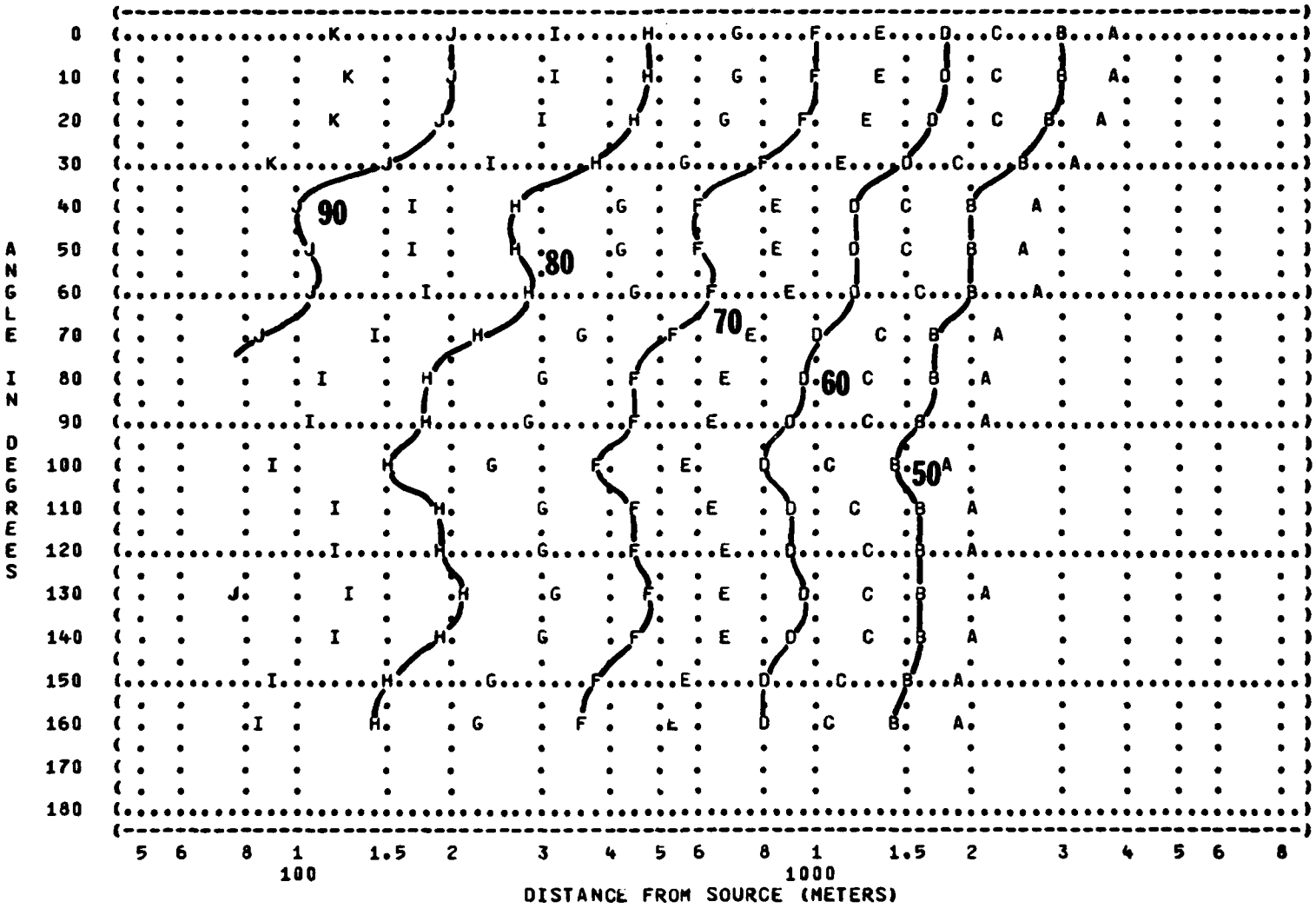


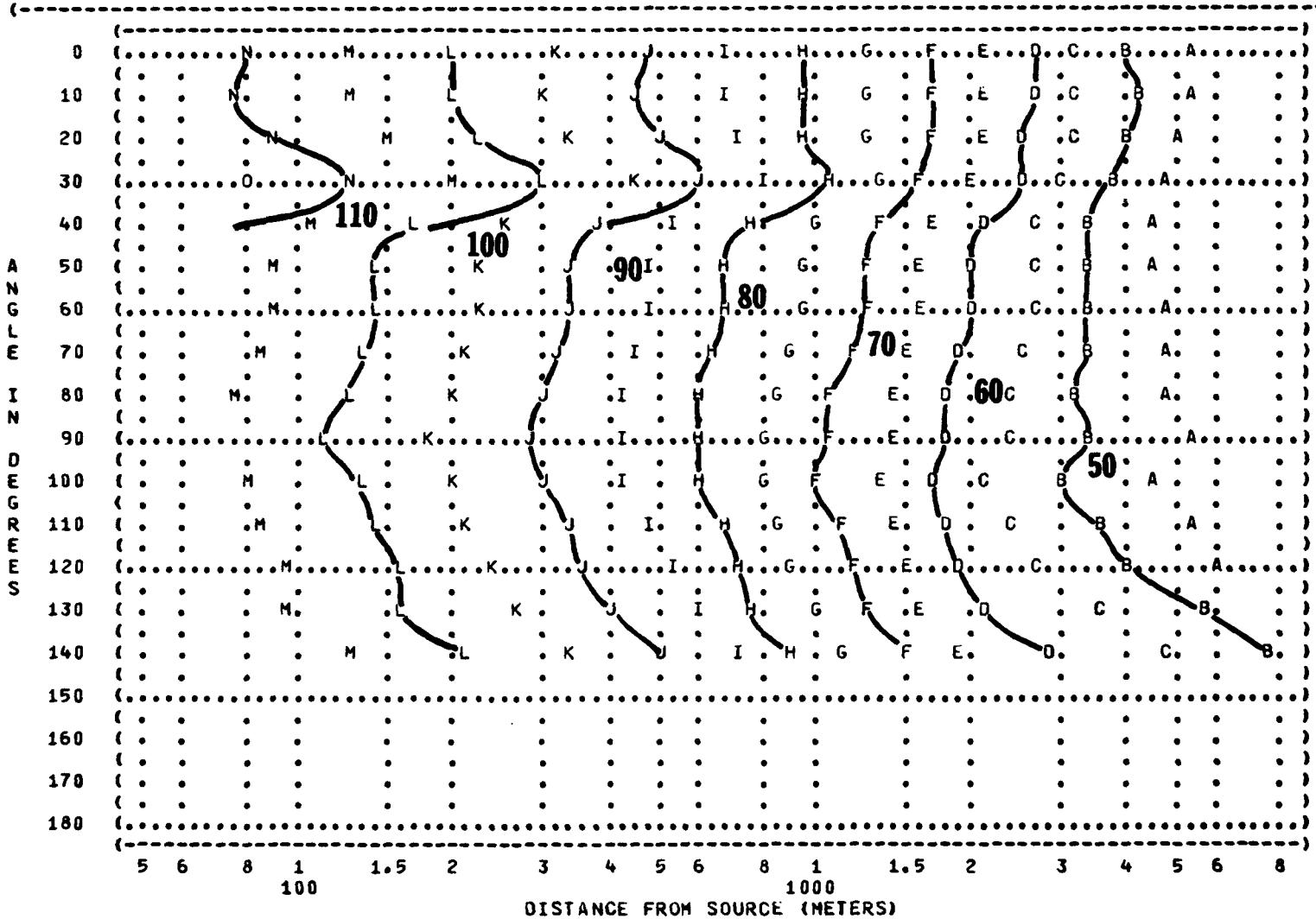
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

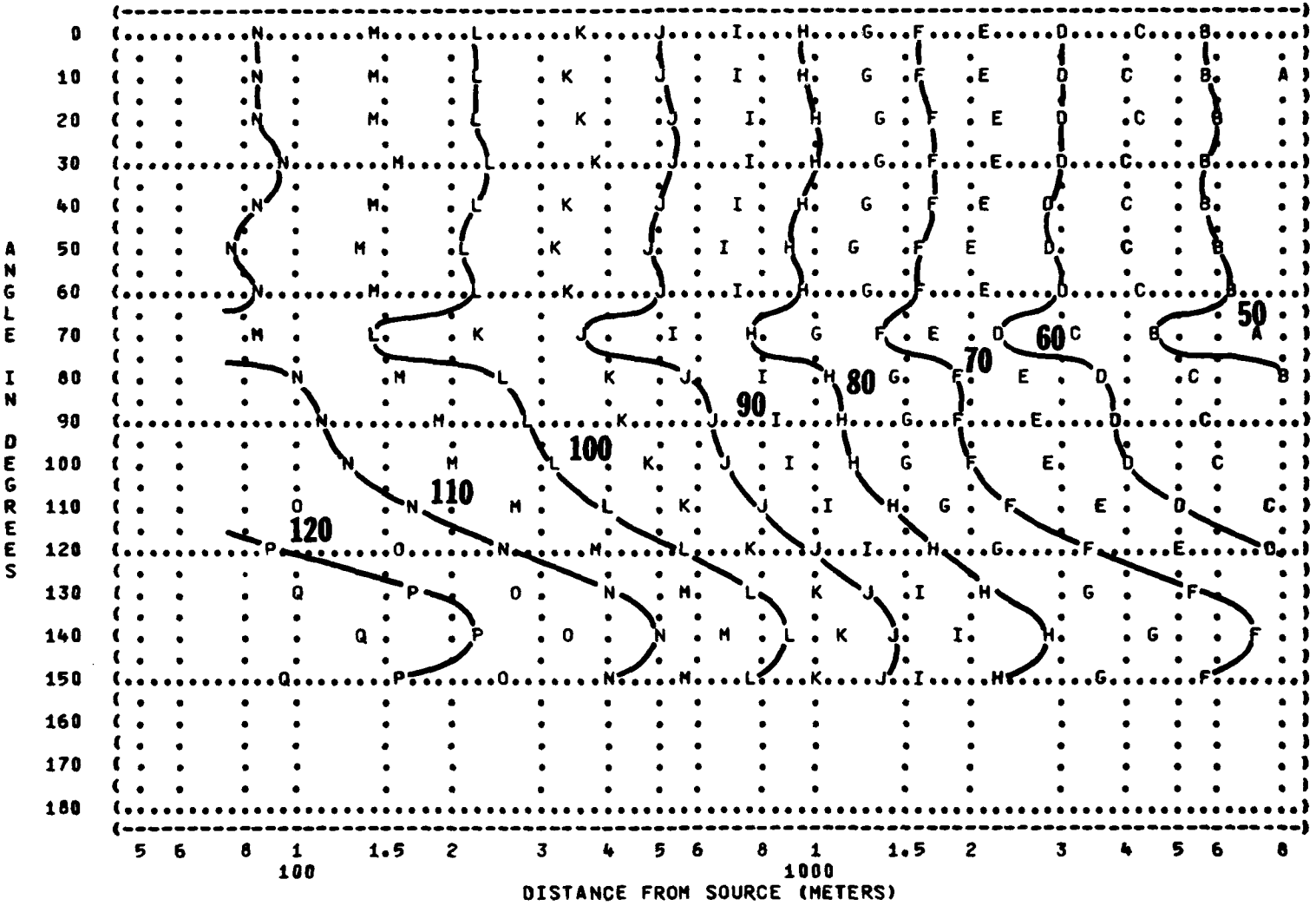
FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 14



POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115
P	120
Q	125

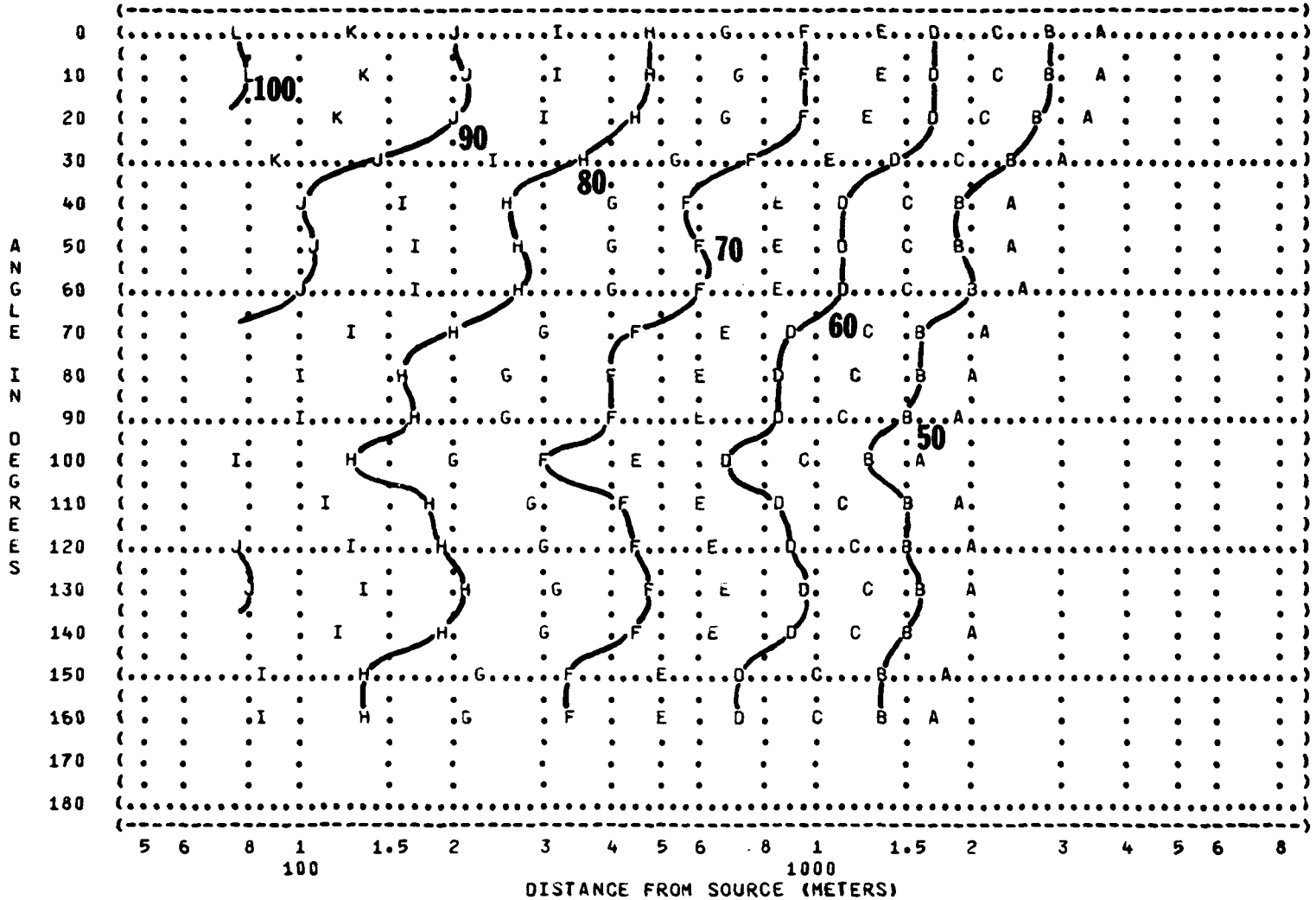
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100

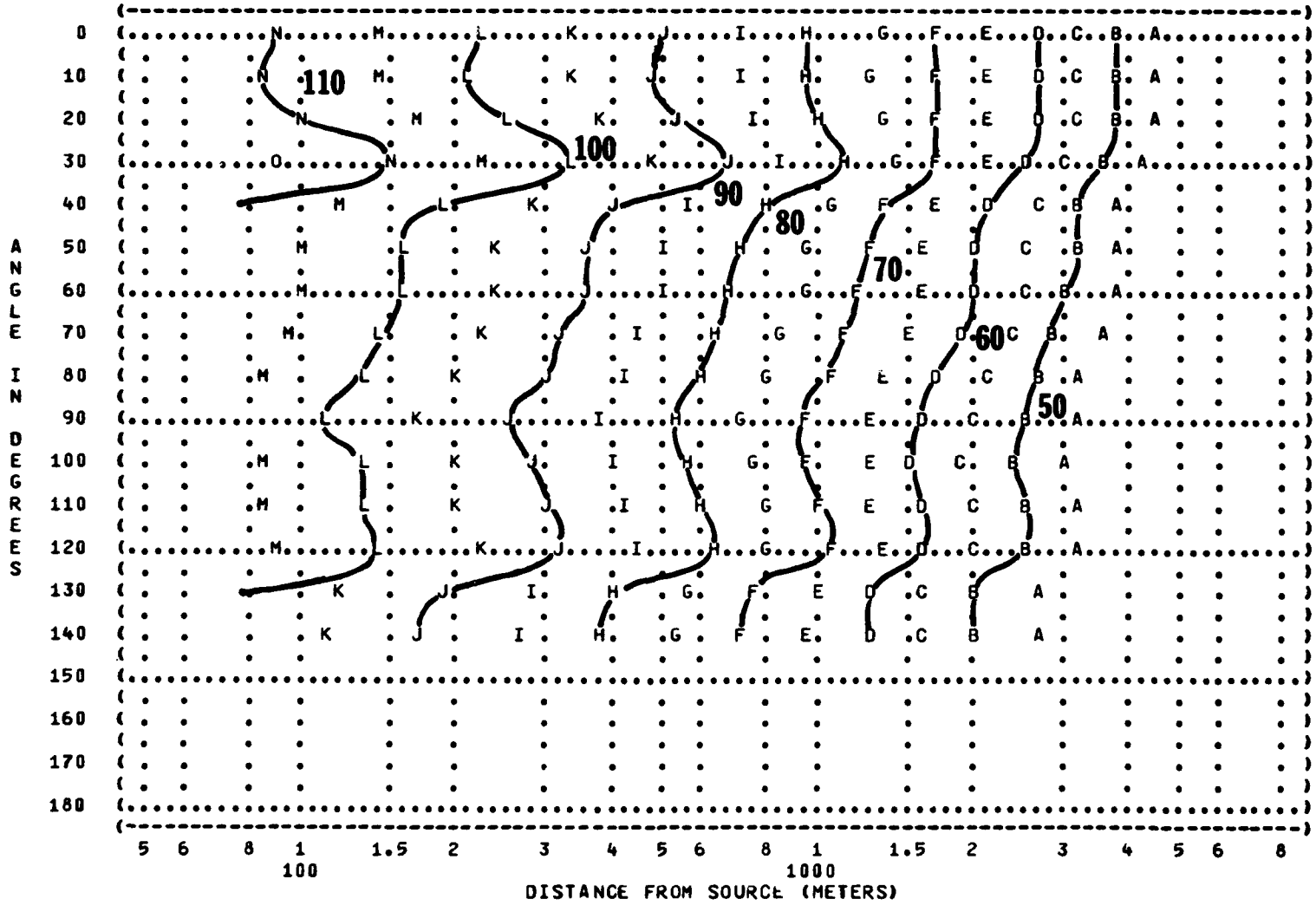
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

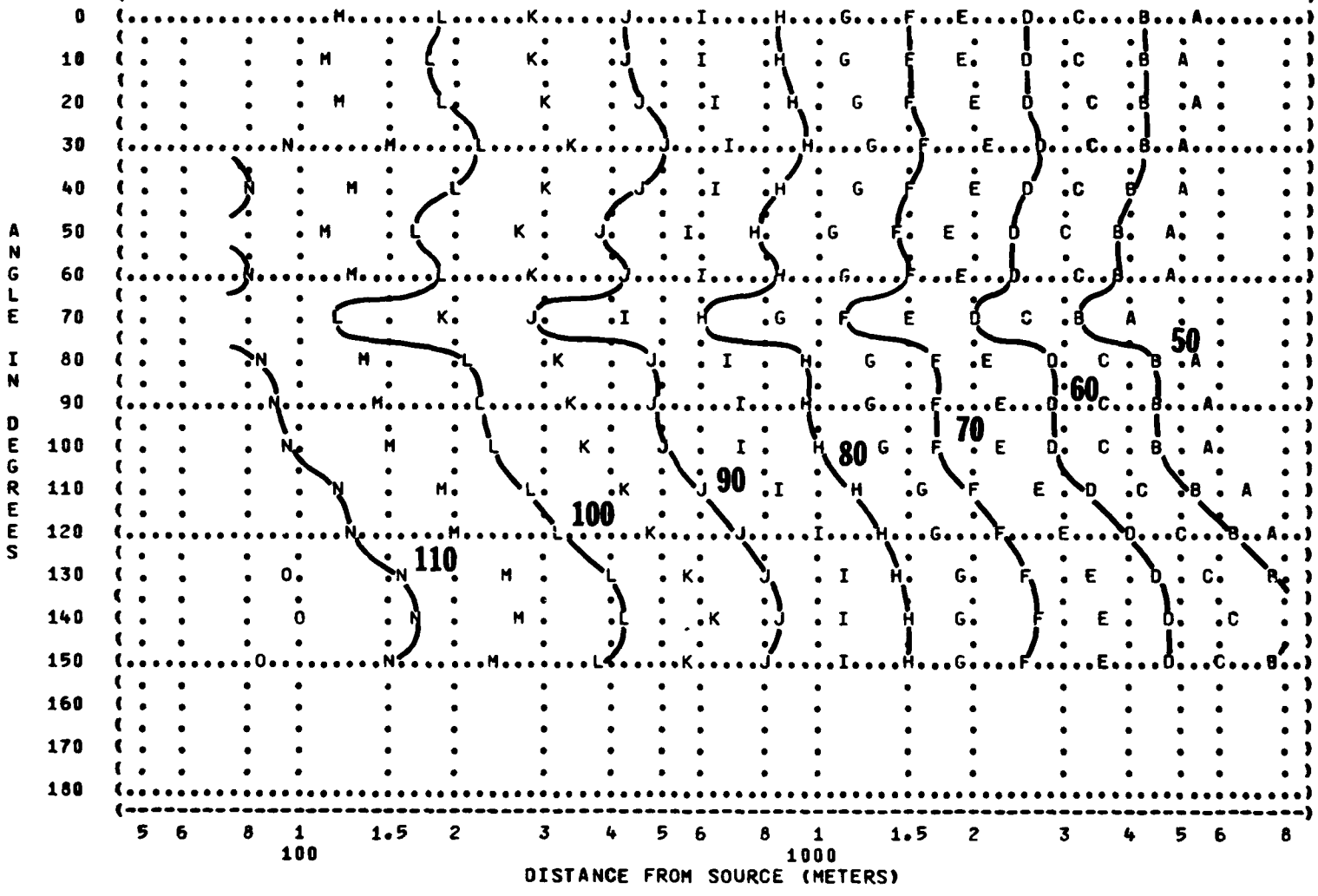
FIGURE: 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

FIGURE: 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115

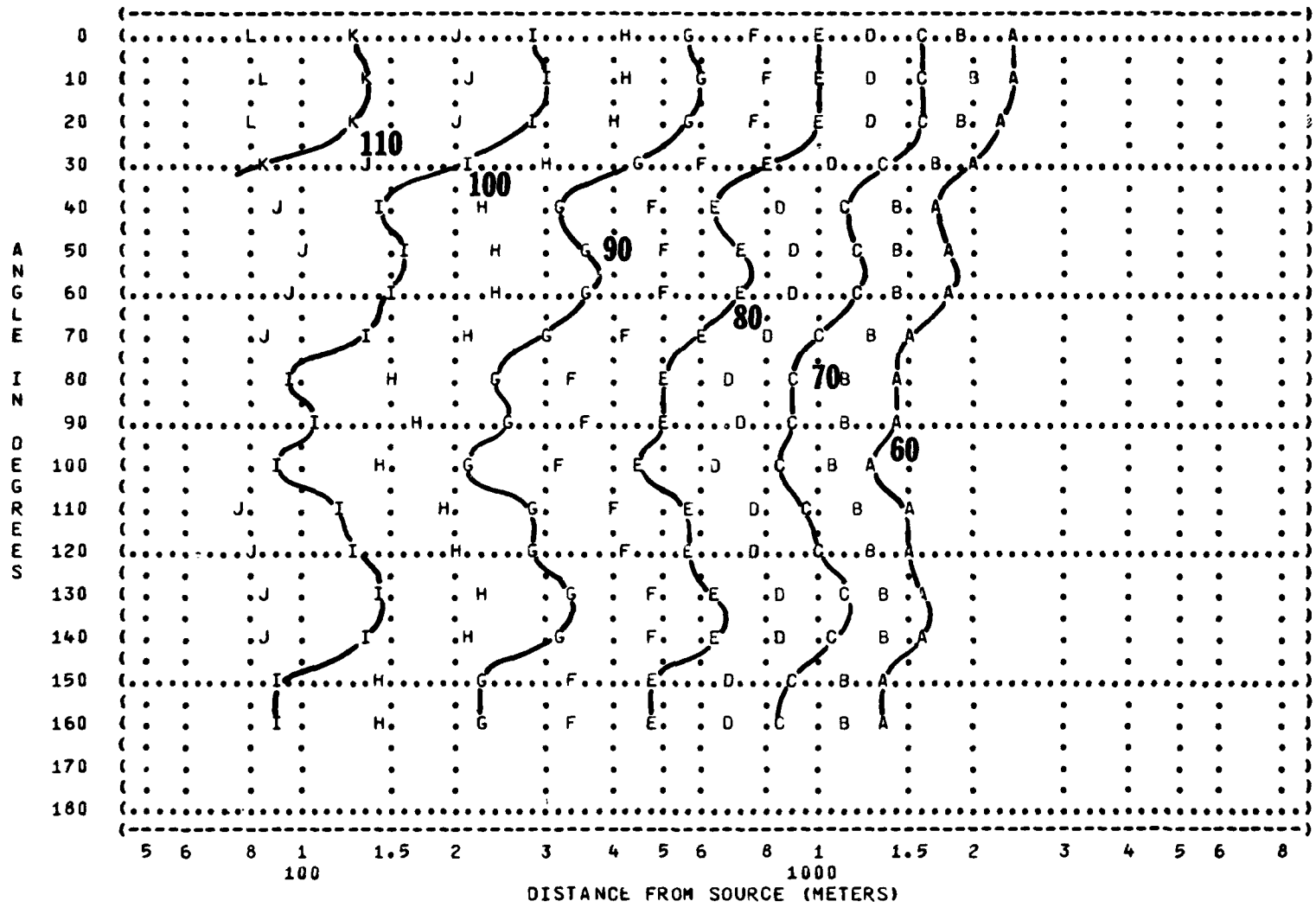


FIGURE: 8

PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120
N	125
O	130

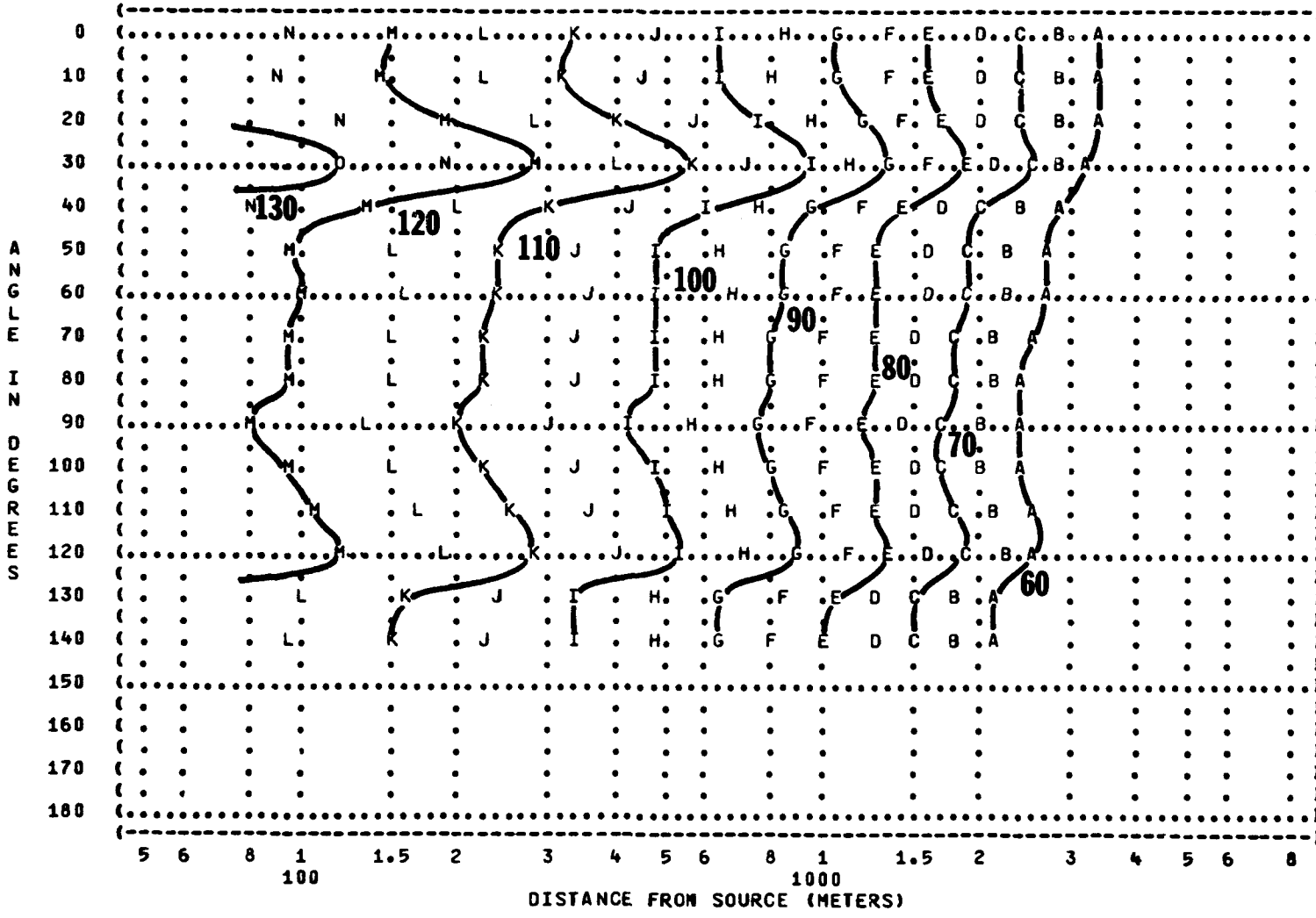


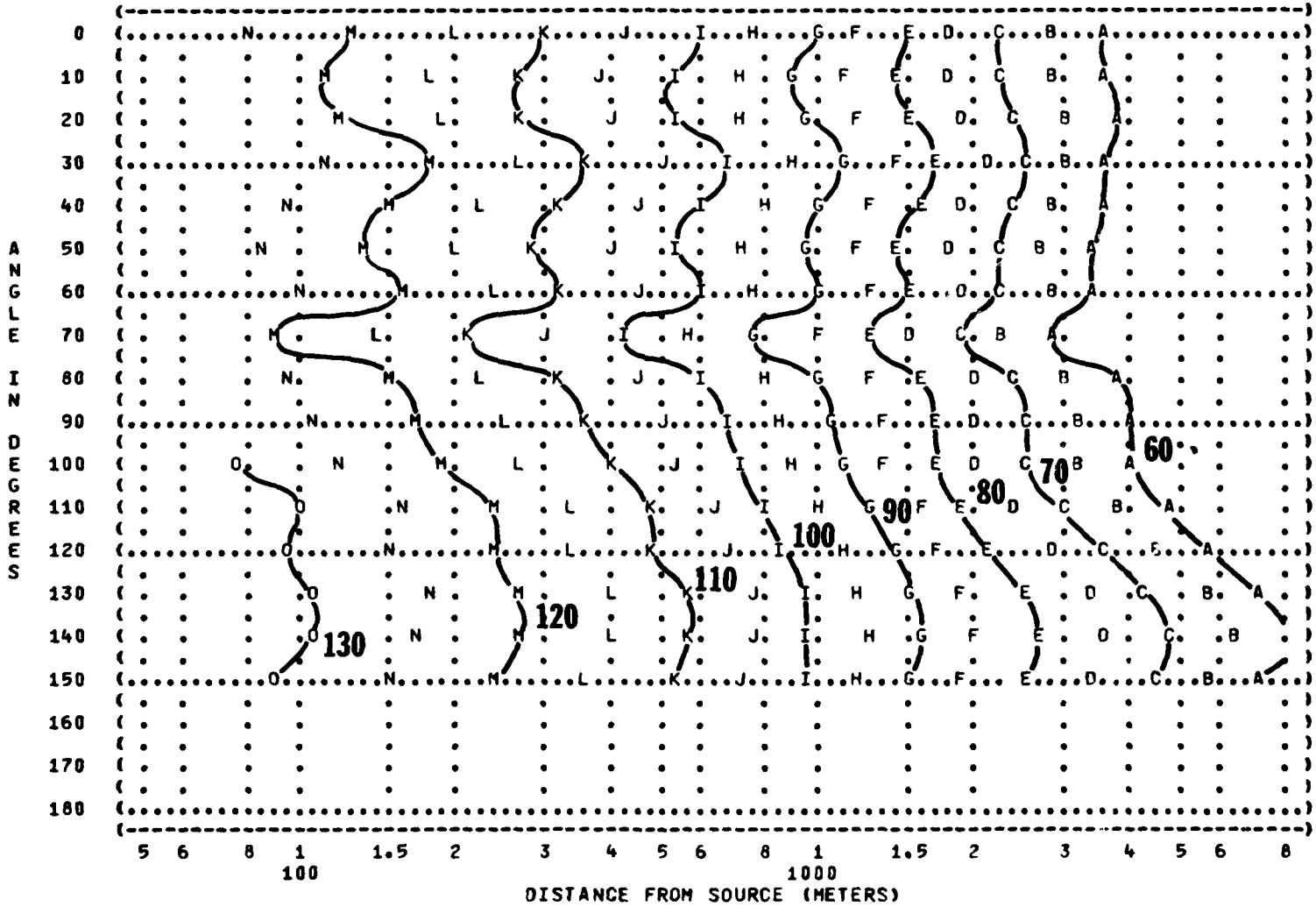
FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 16



POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120
N	125
O	130

FIGURE: 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01

06 MAY 75

PAGE 17

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

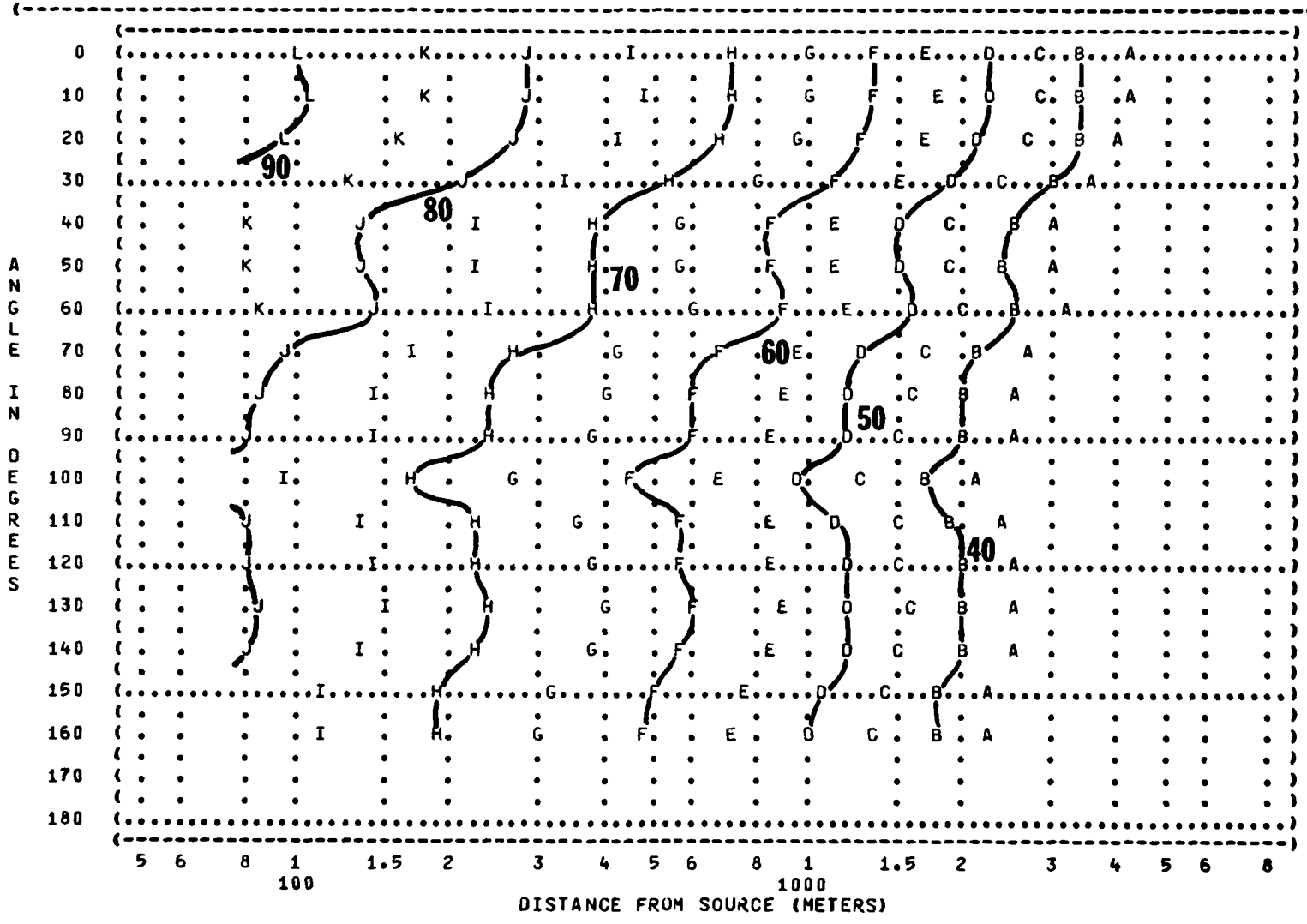


FIGURE: 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

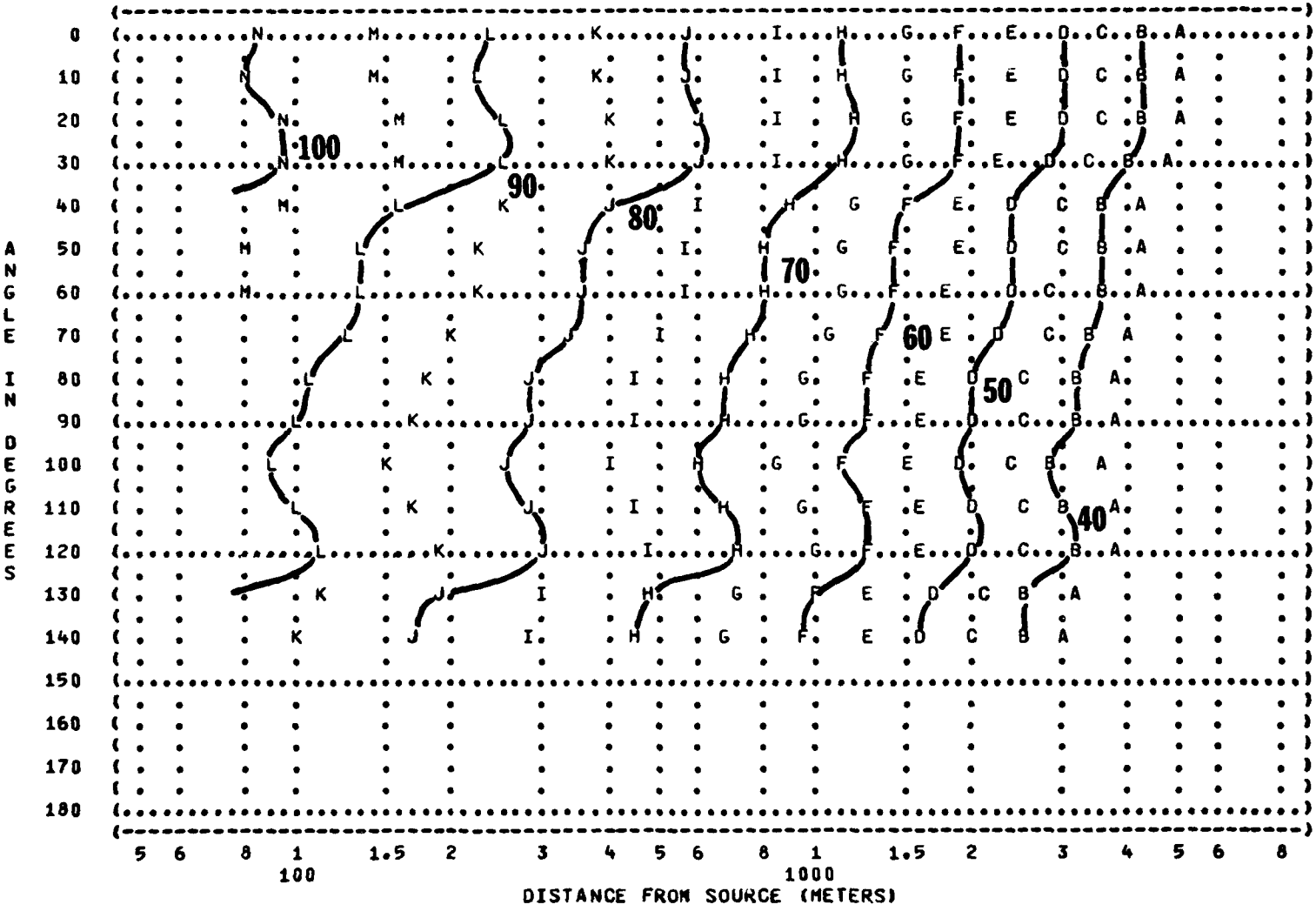


FIGURE: 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

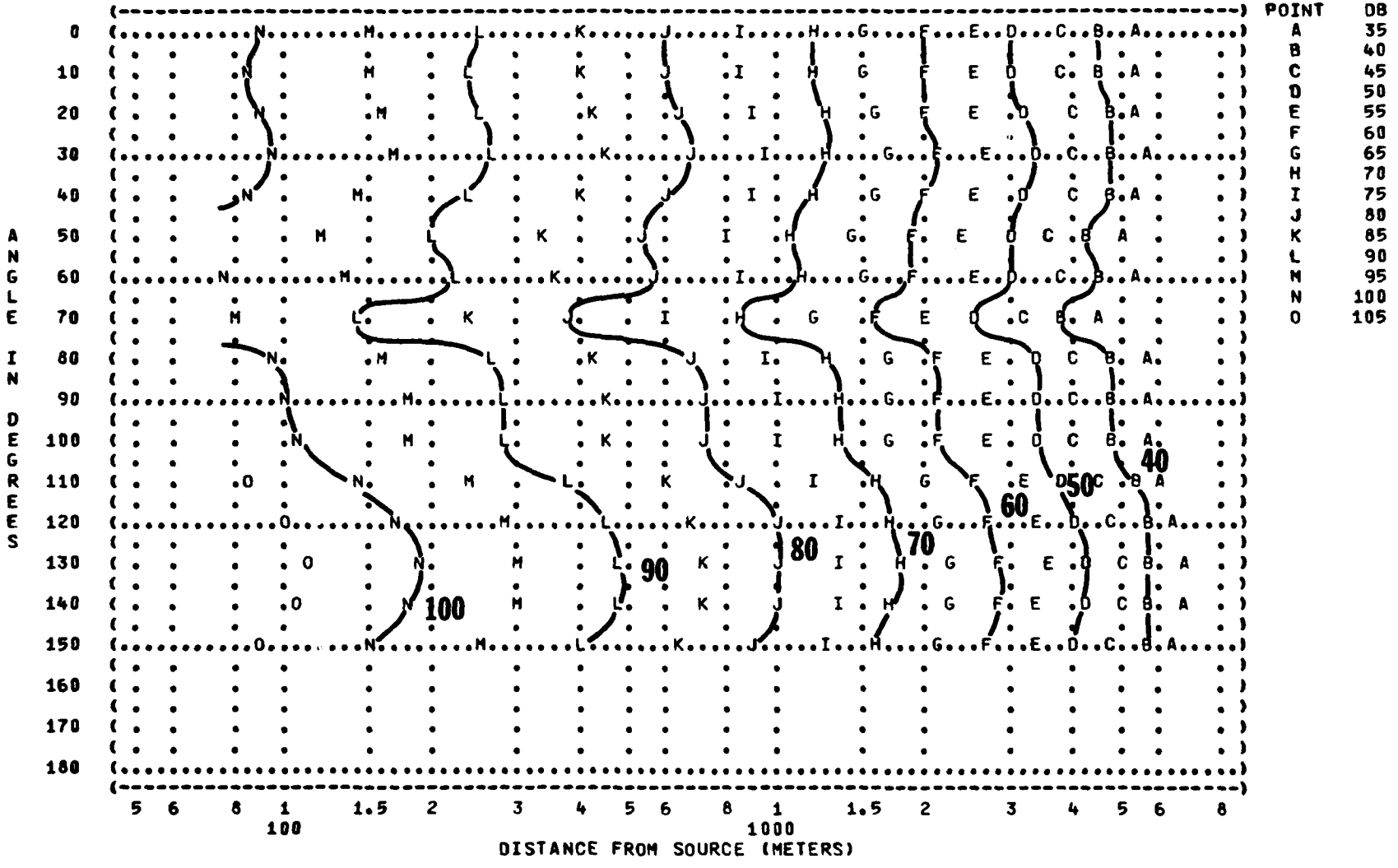


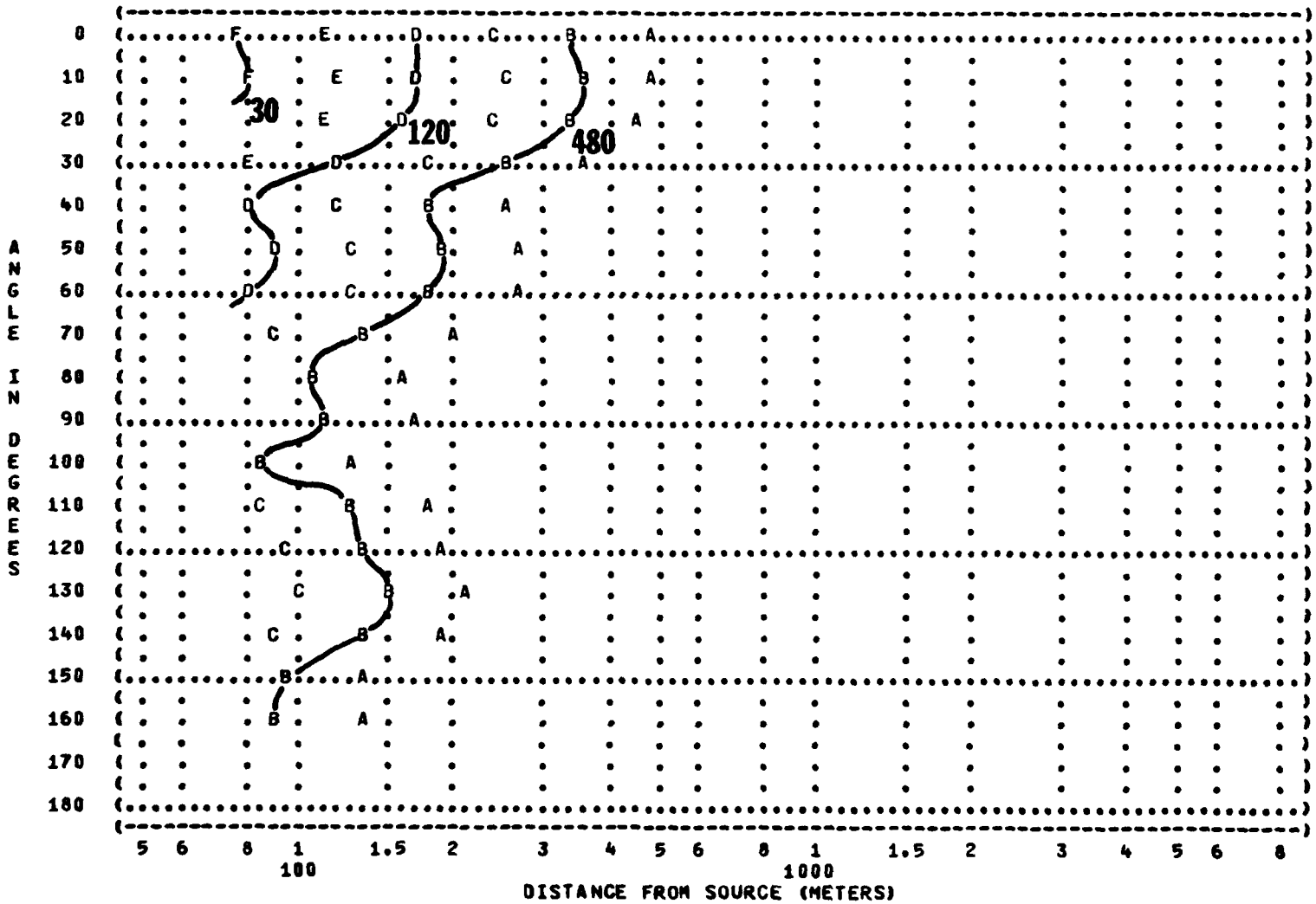
FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

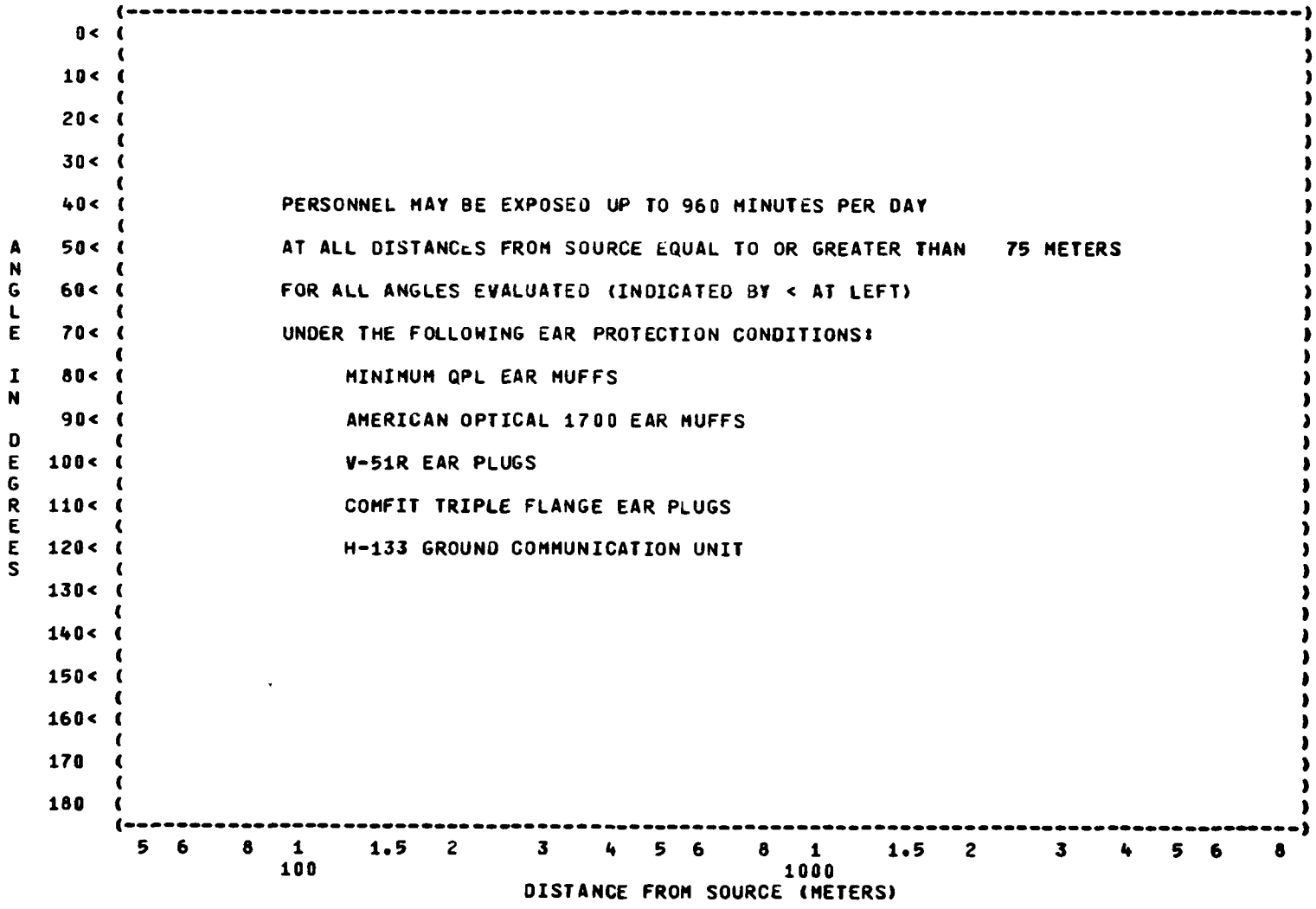


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

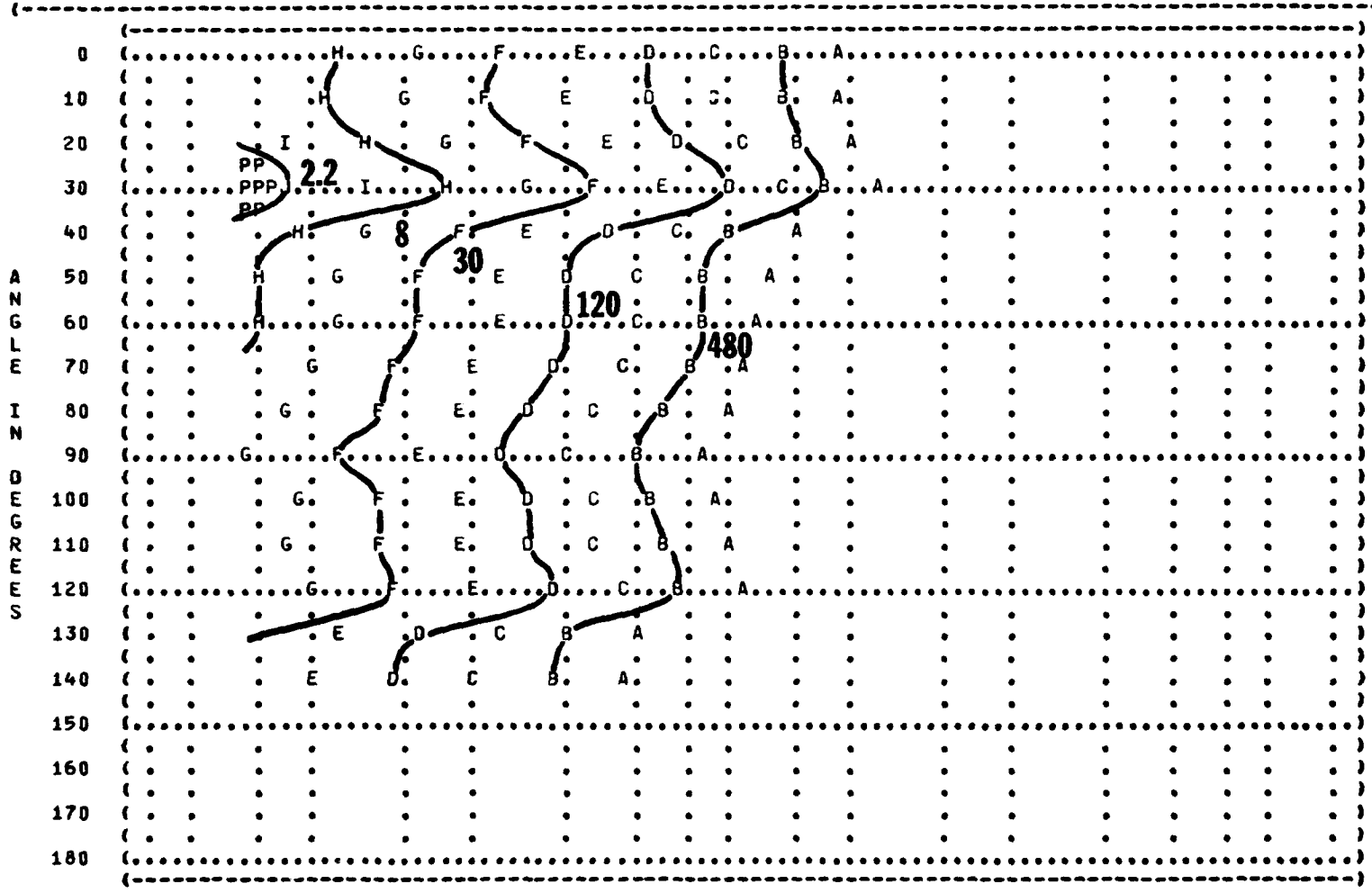
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8
I	4
J	2.



P ADDITIONAL EAR PROTECTION REQUIRED.

FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 8

POINT	MIN
A	960
B	480
C	240

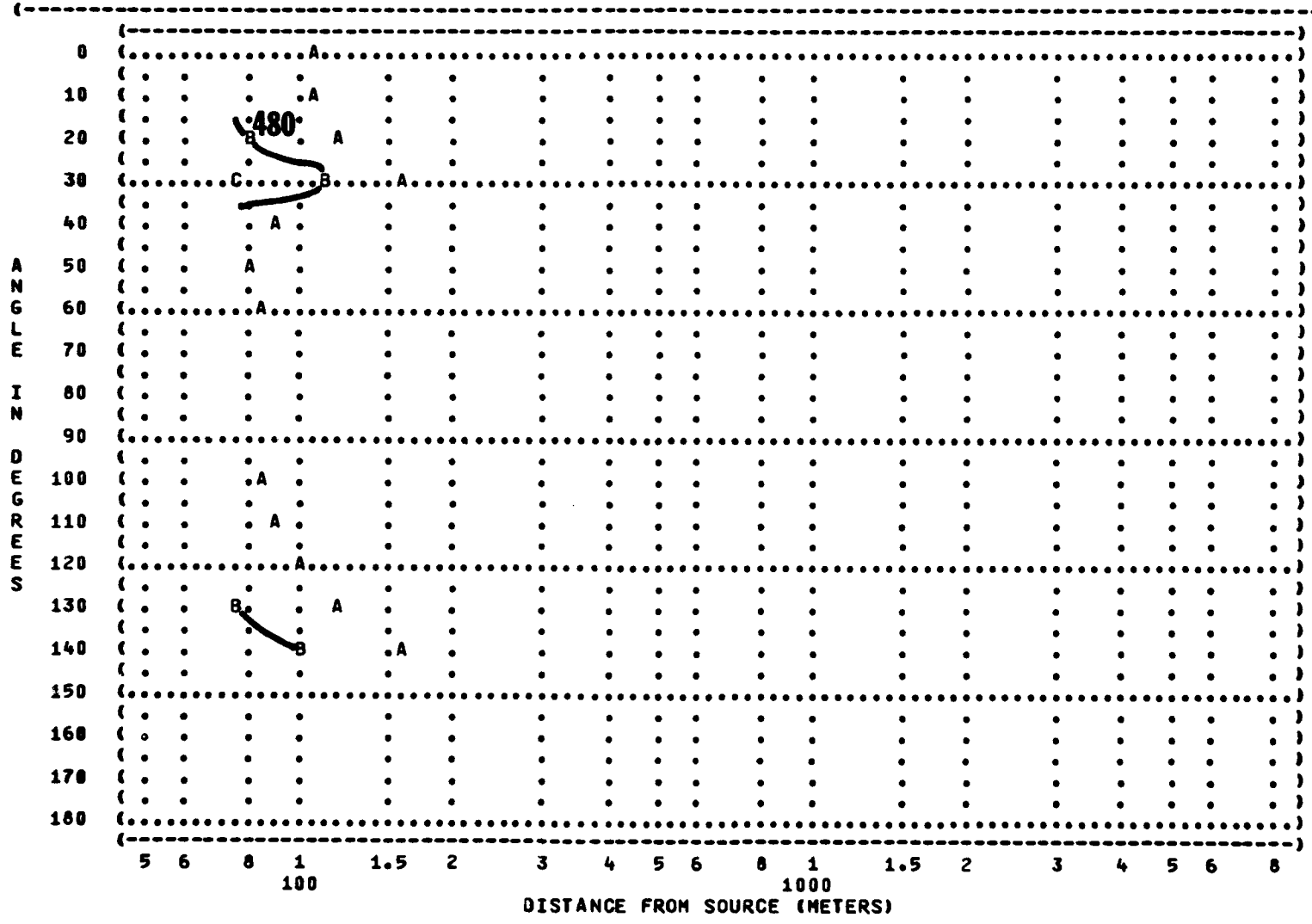


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 9

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960

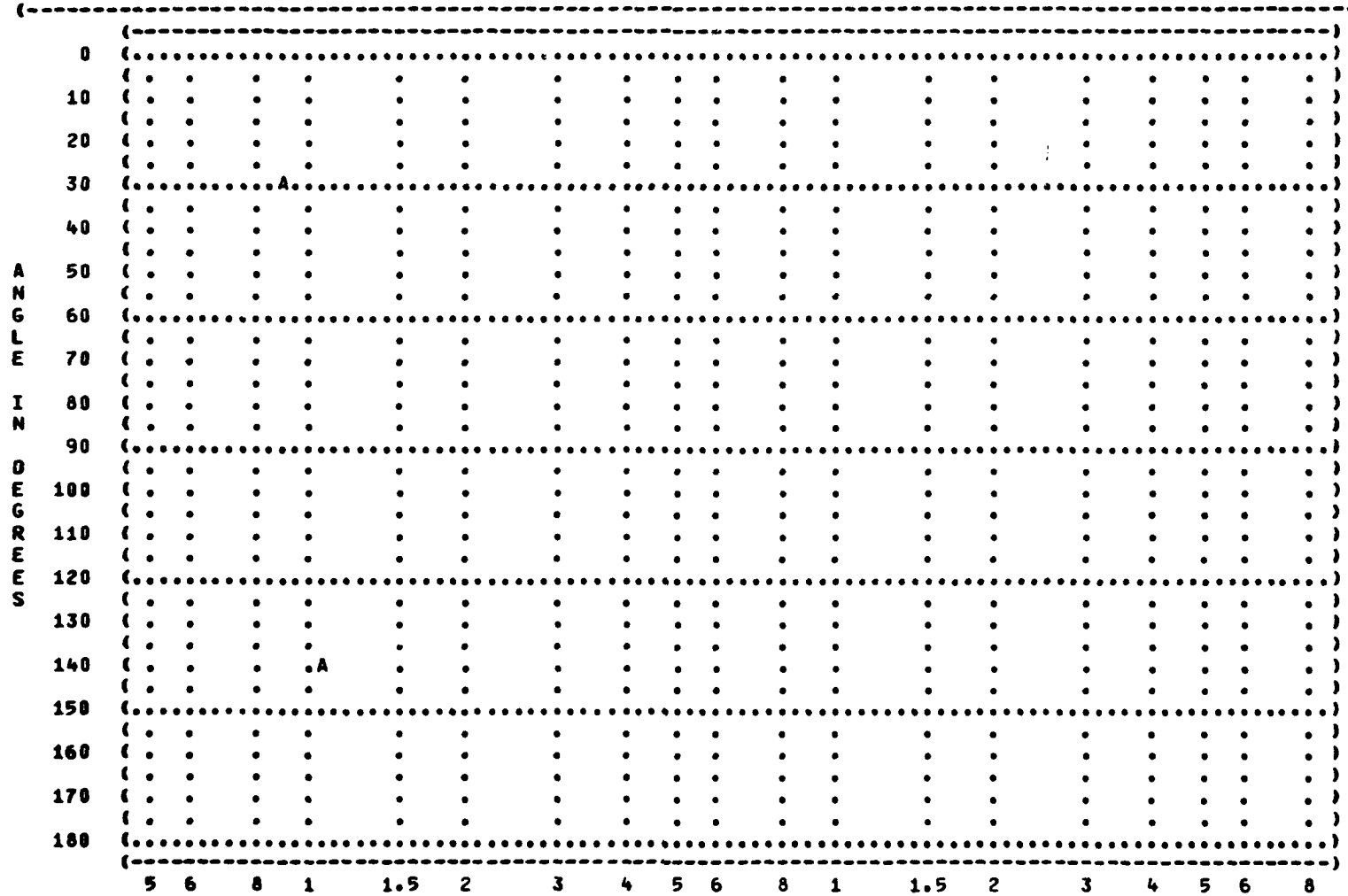


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 10

POINT	MIN
A	960
B	480

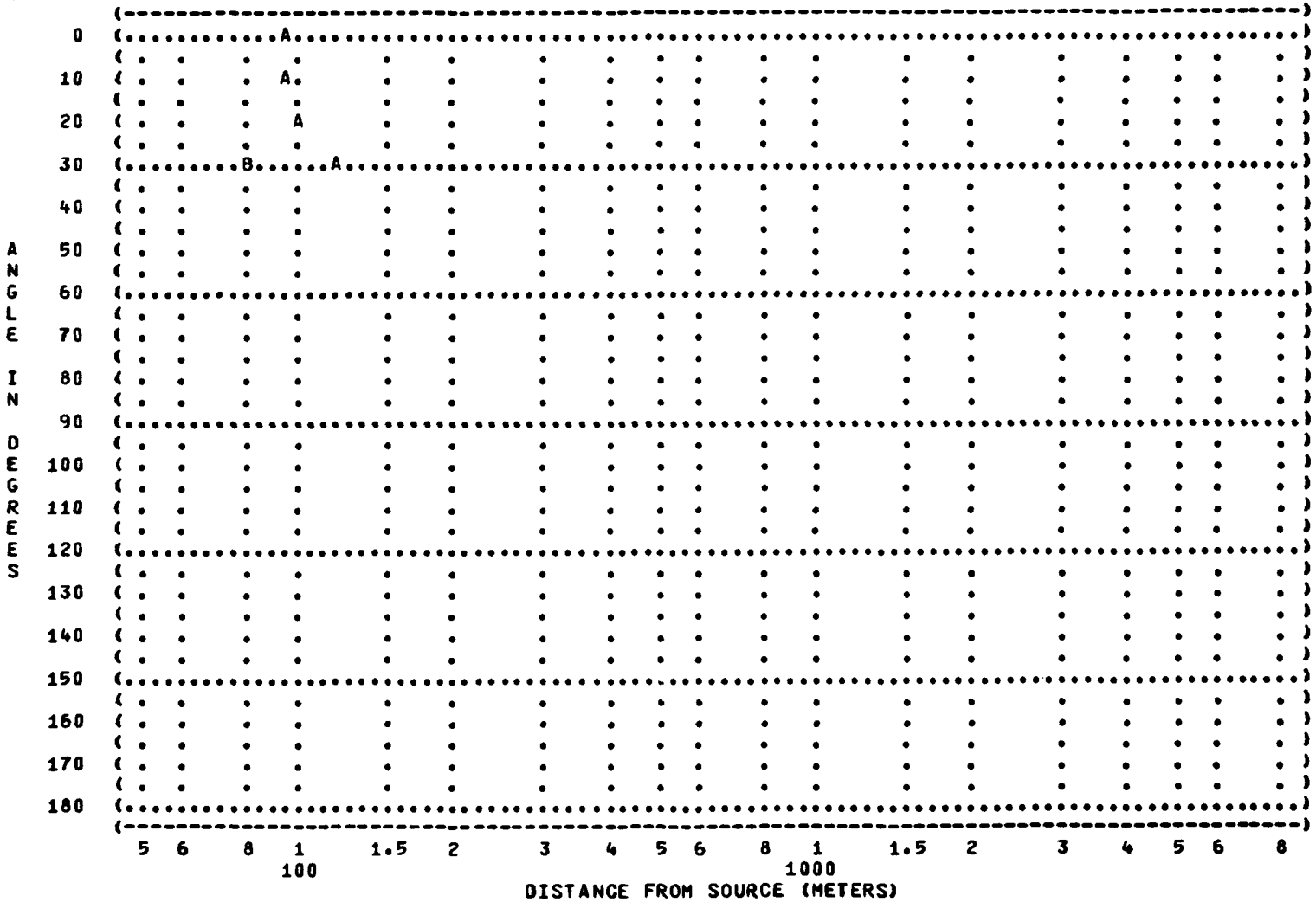


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 11

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120

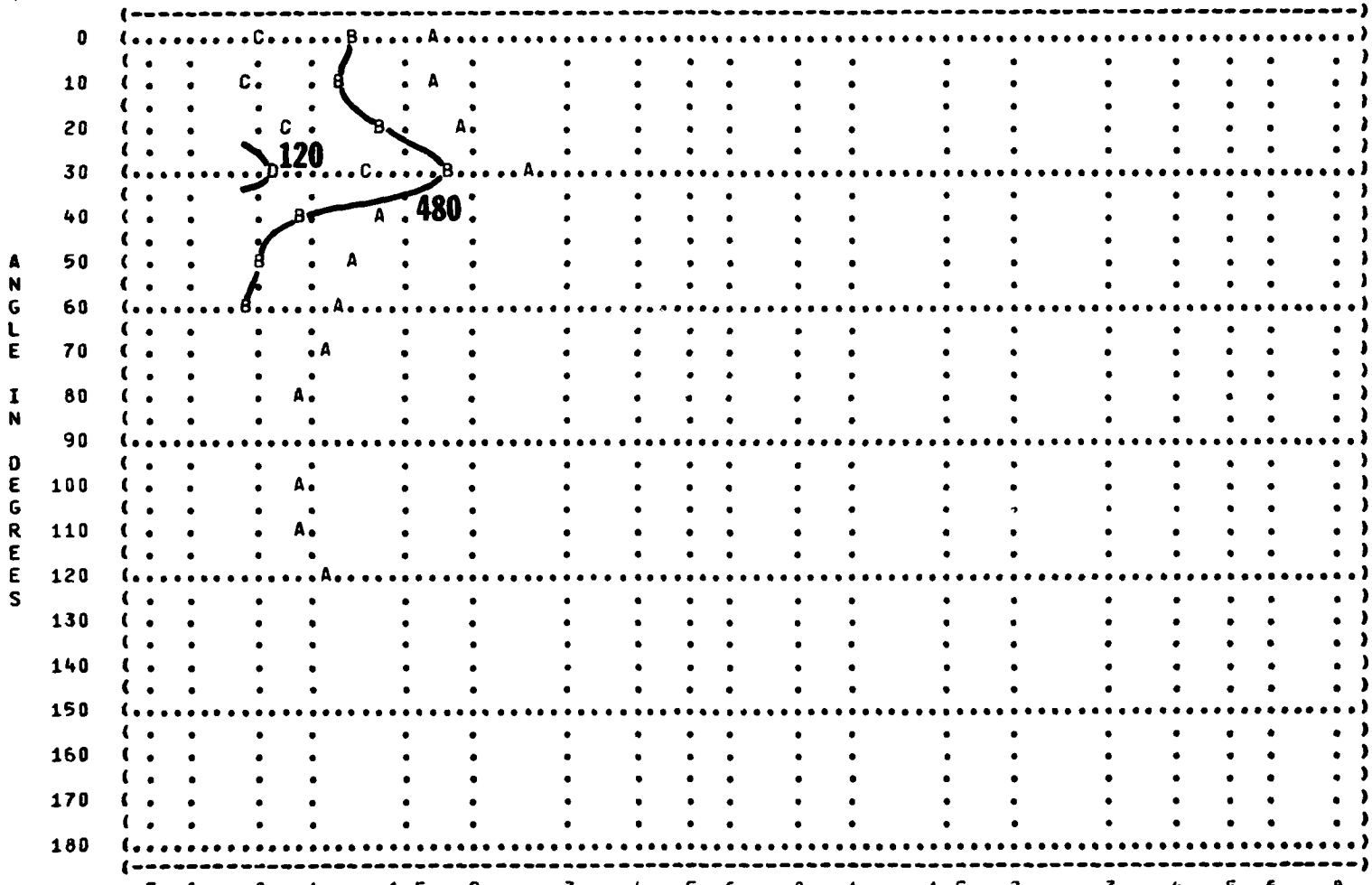


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240

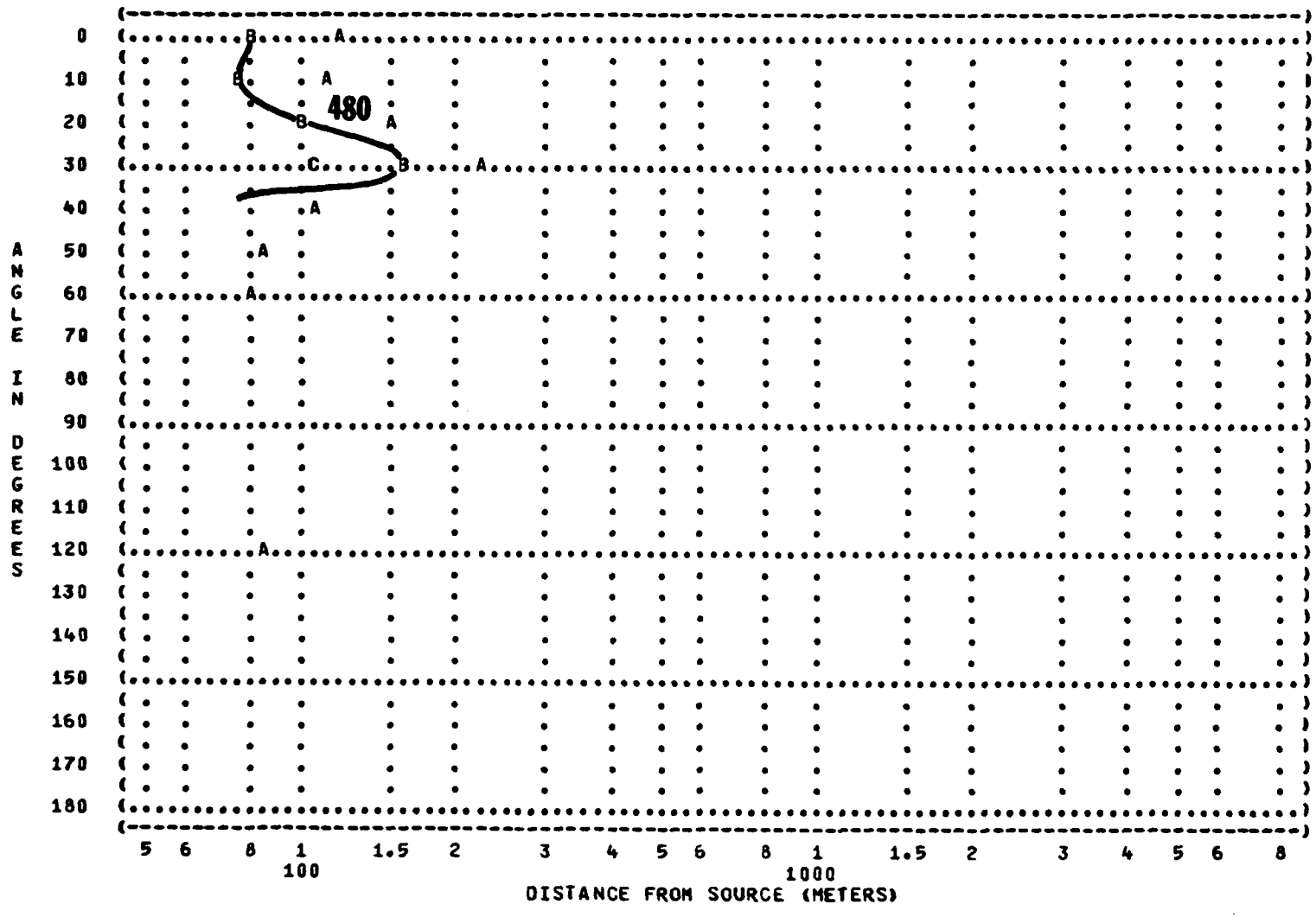


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

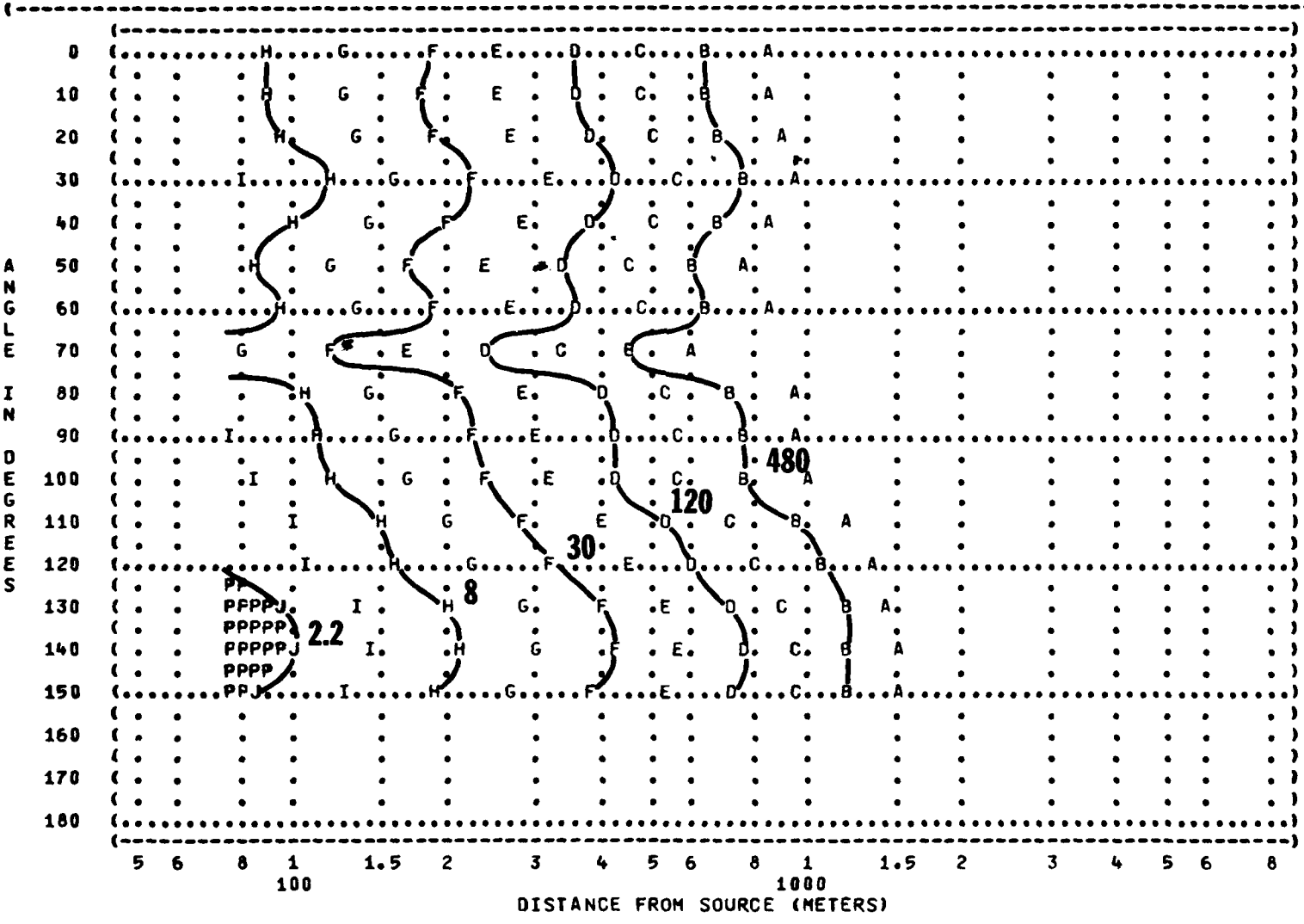
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8
I	4
J	2.2



P ADDITIONAL EAR PROTECTION REQUIRED.

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8

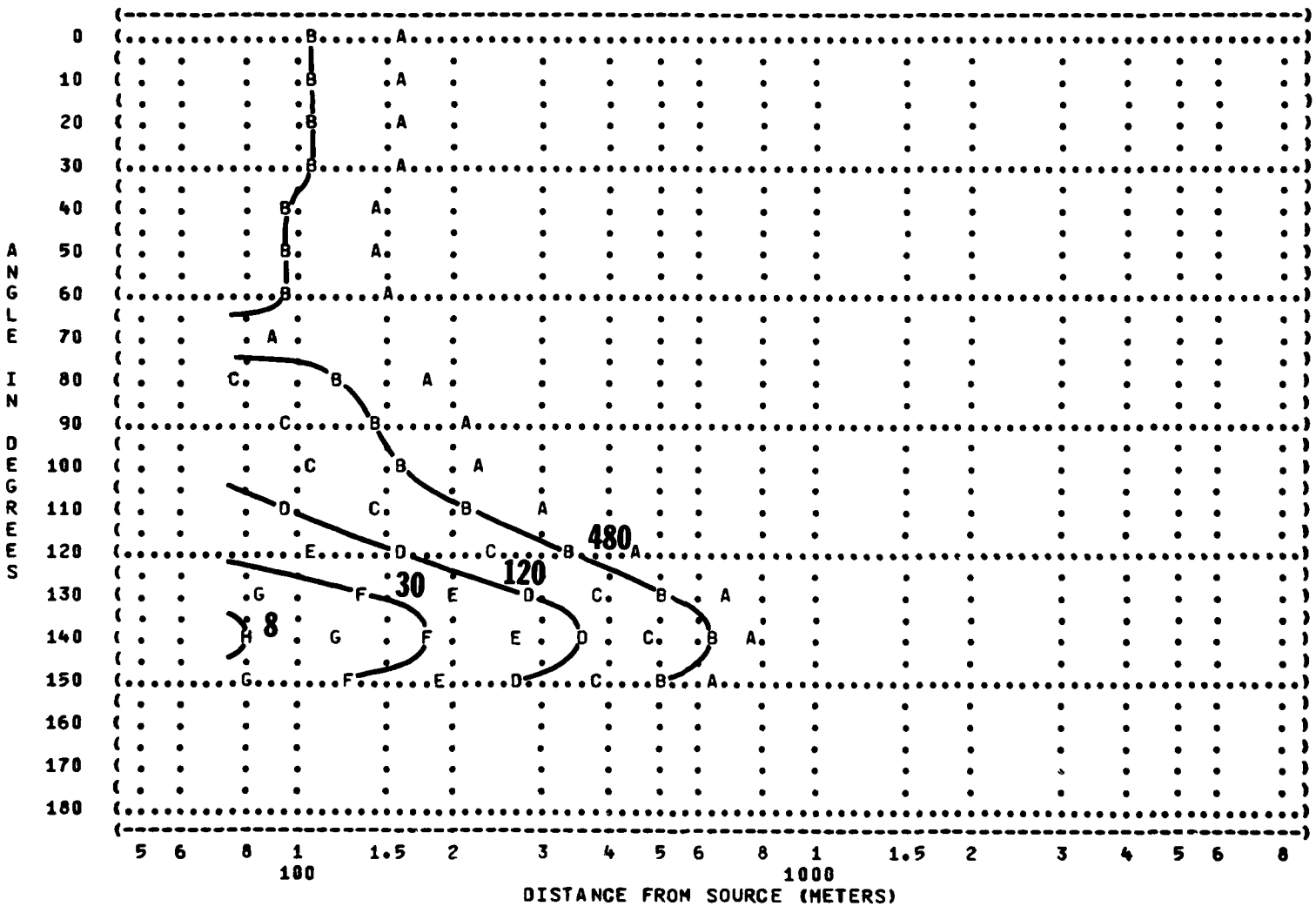


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (1) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 9

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30

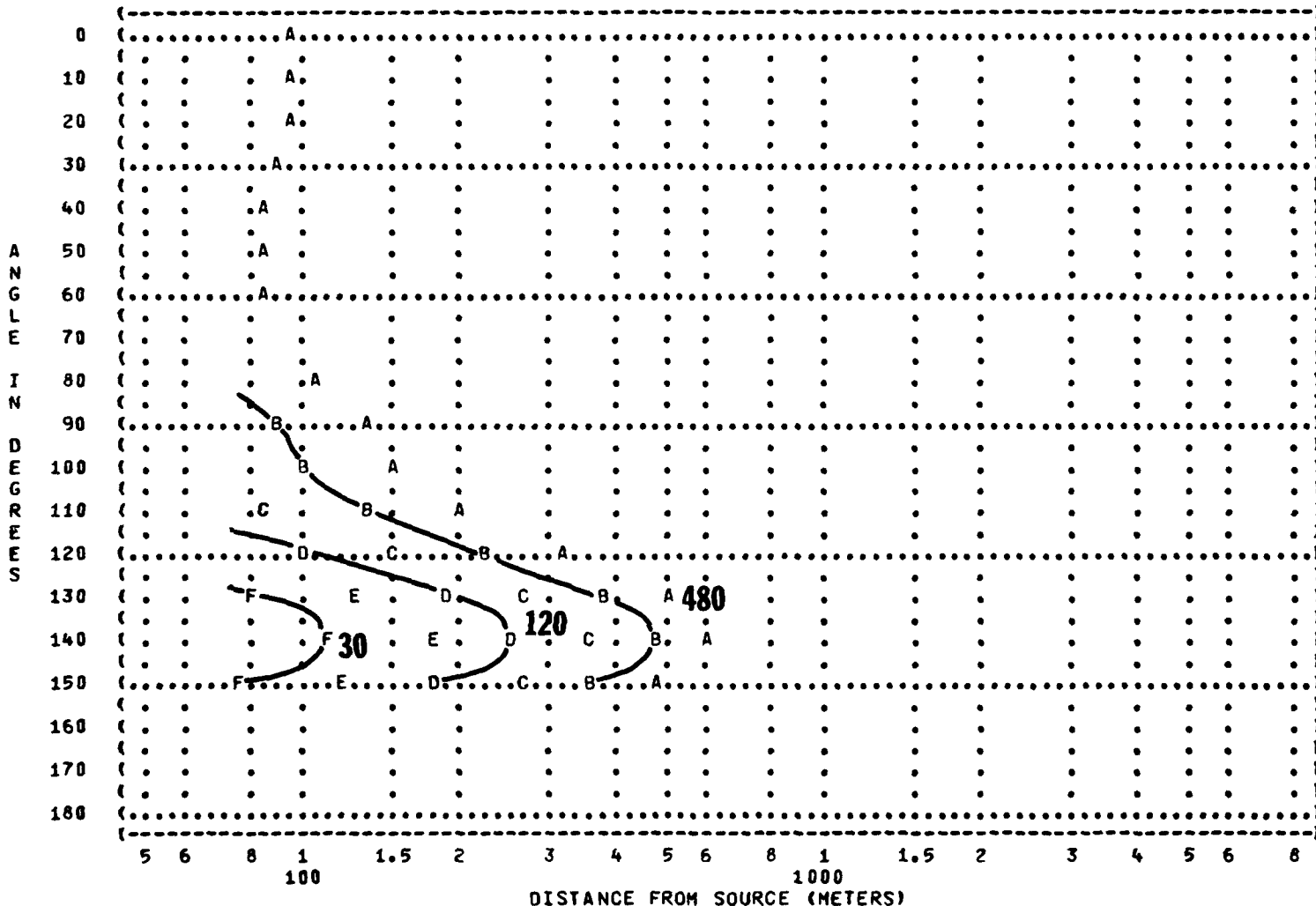


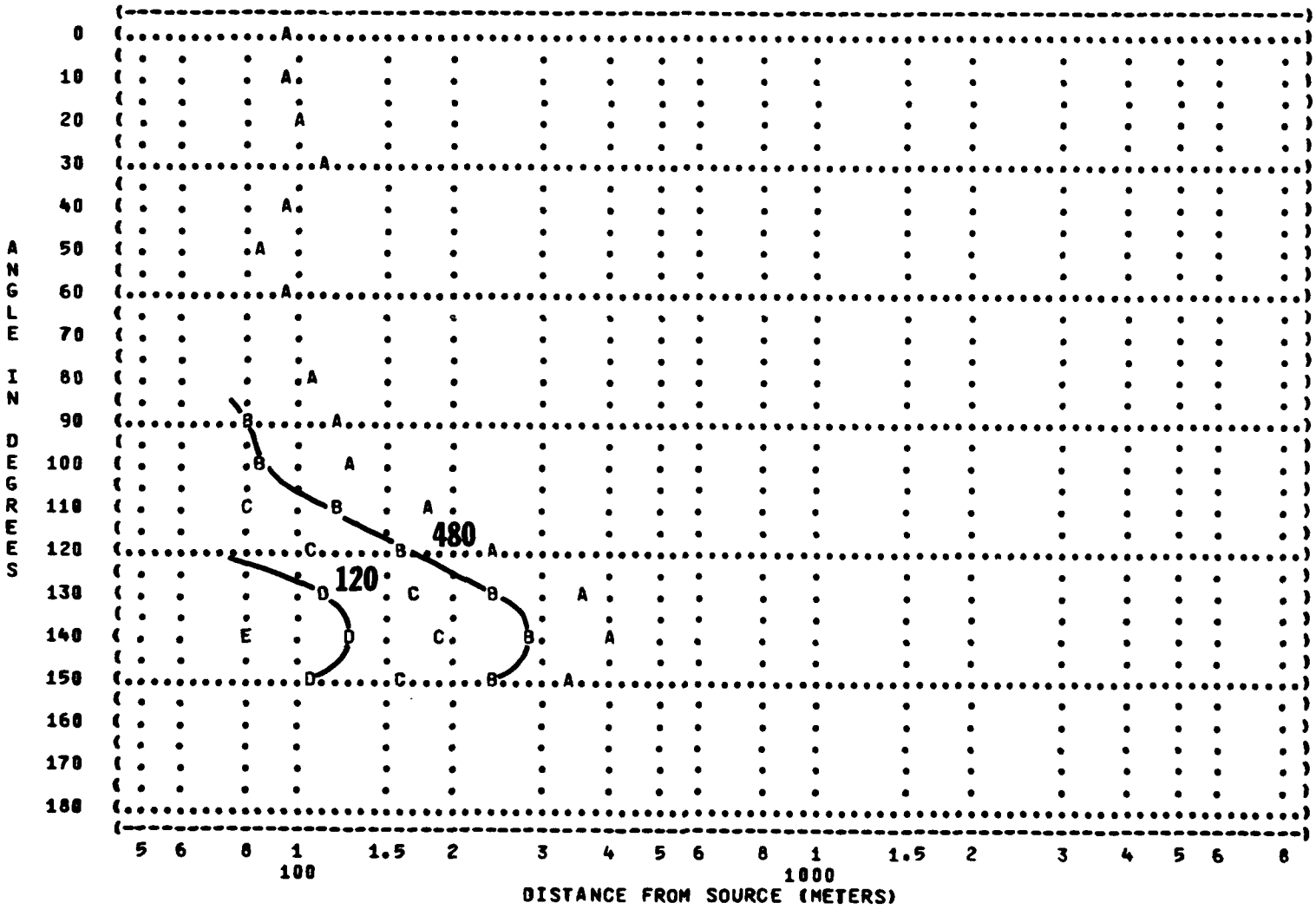
FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	MIN
A	960
B	480
C	240
D	120
E	60

FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 11

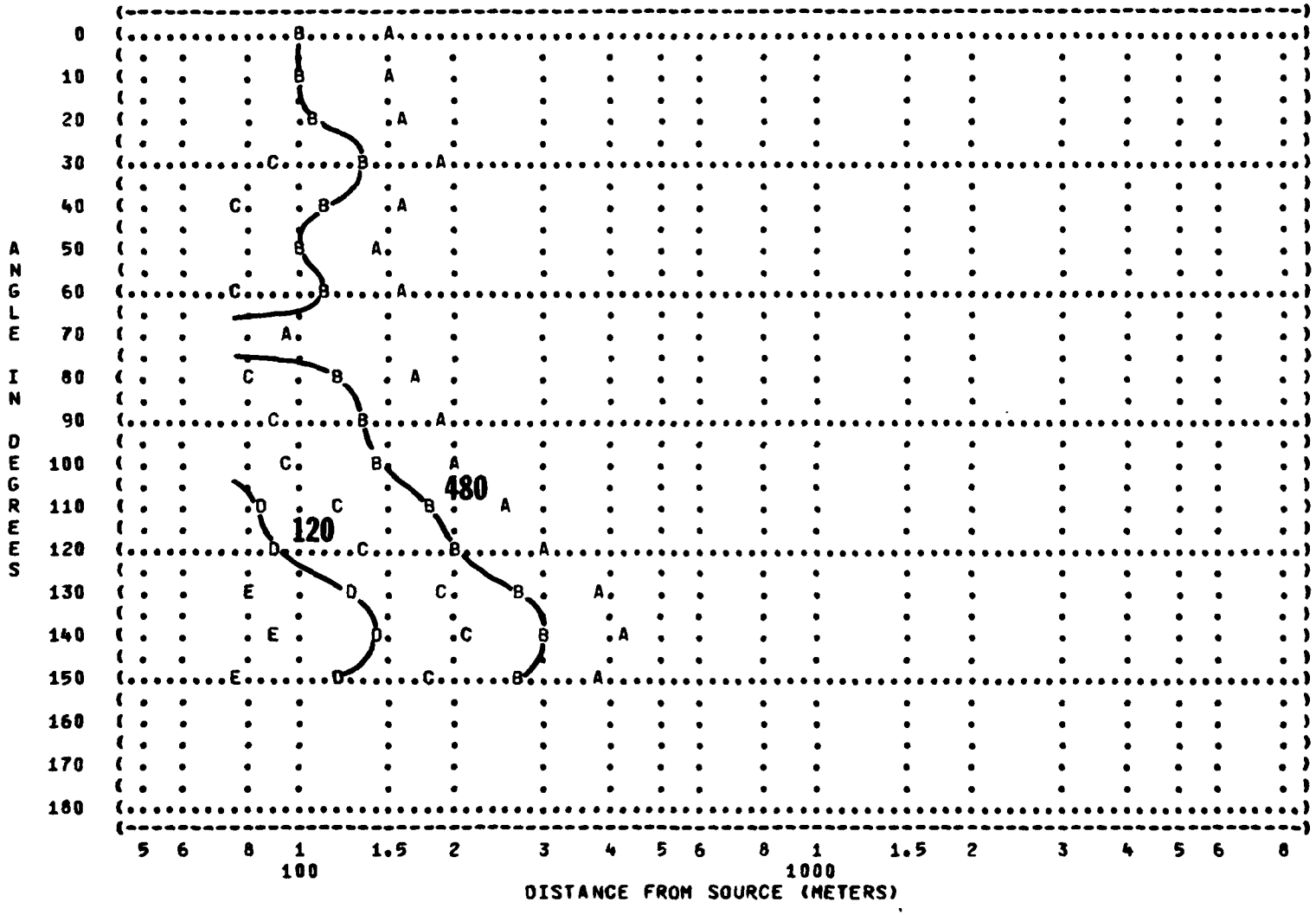


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	MIN
A	960
B	480
C	240
D	120
E	60

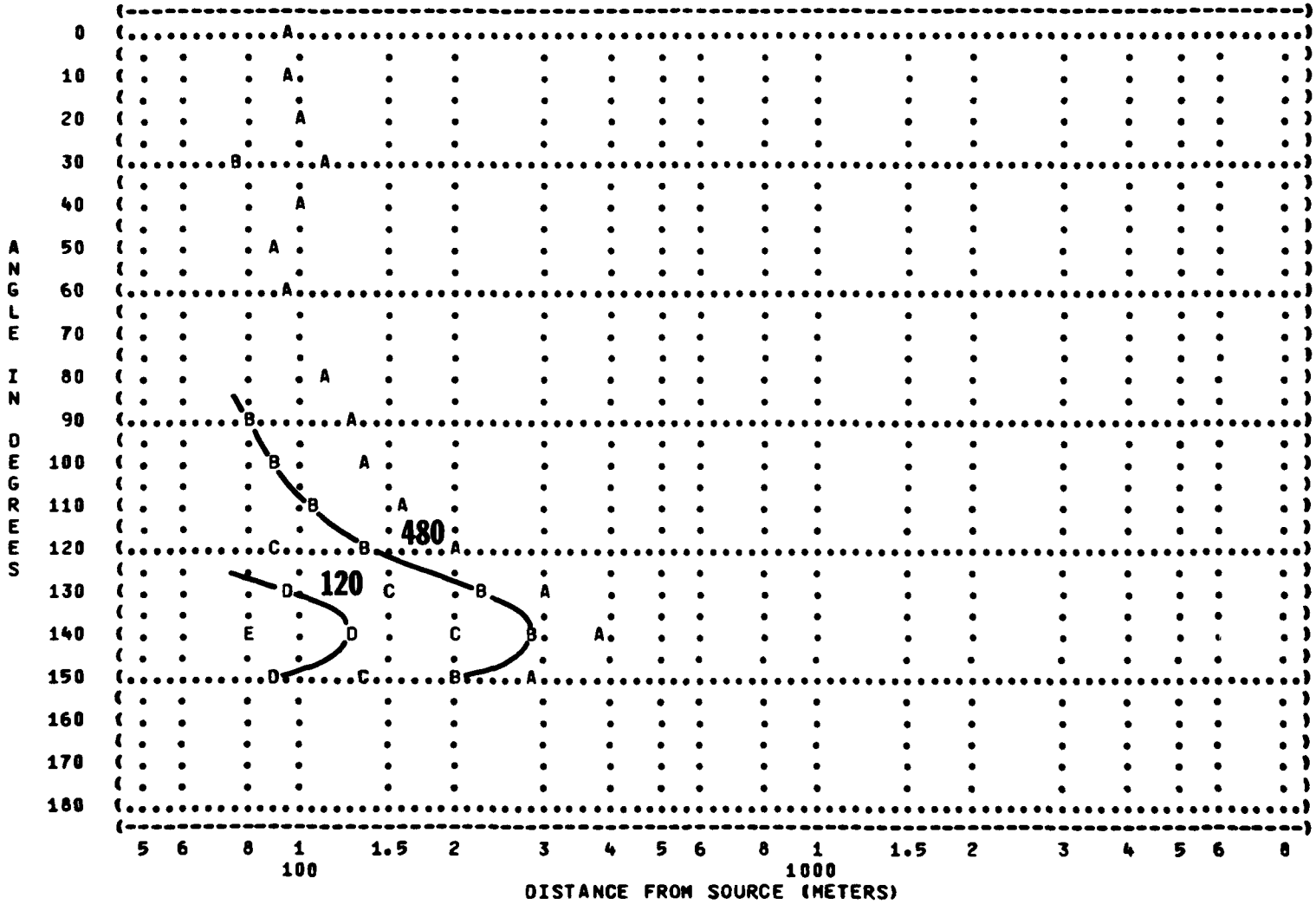


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 18

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75

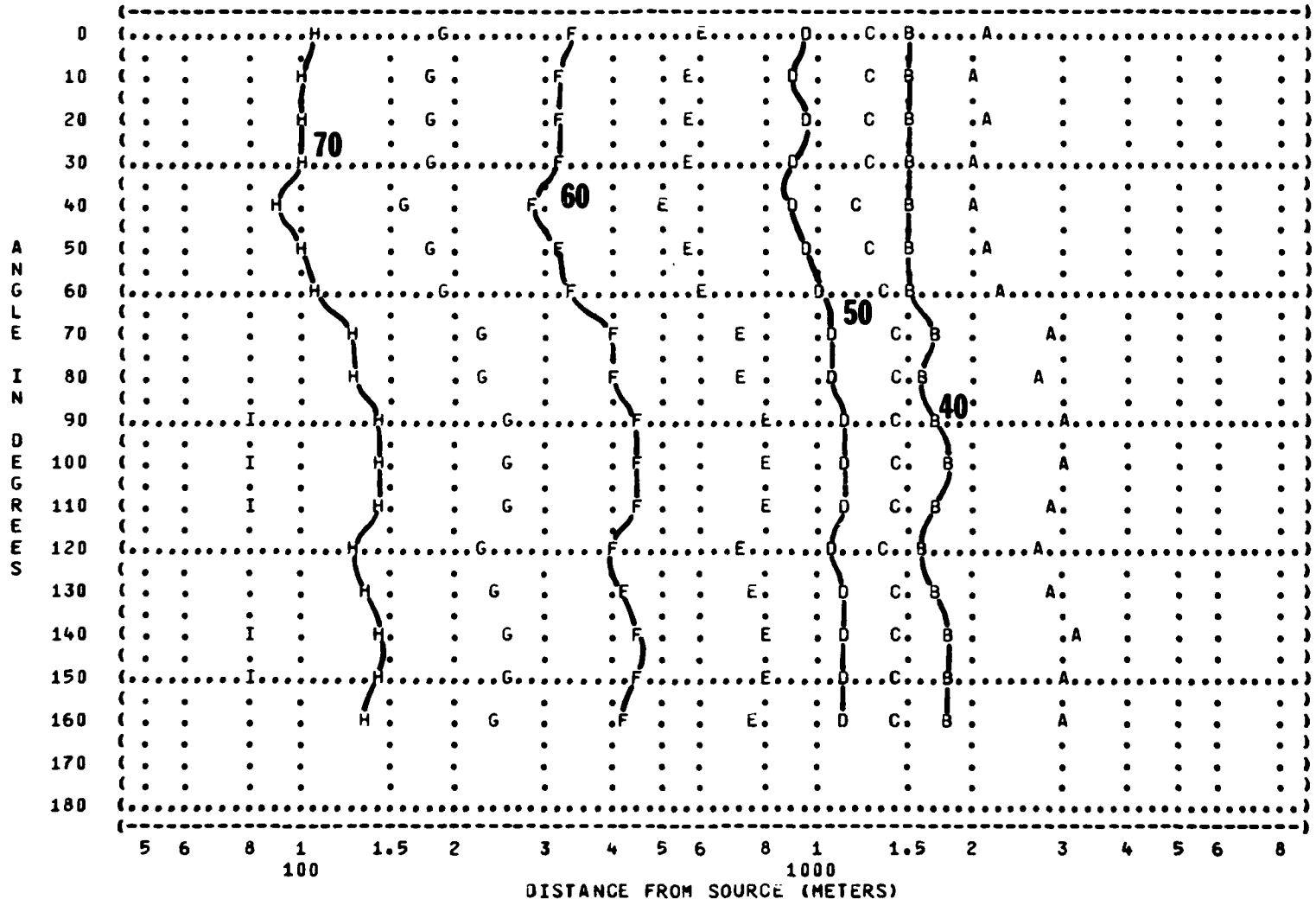


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 19

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80

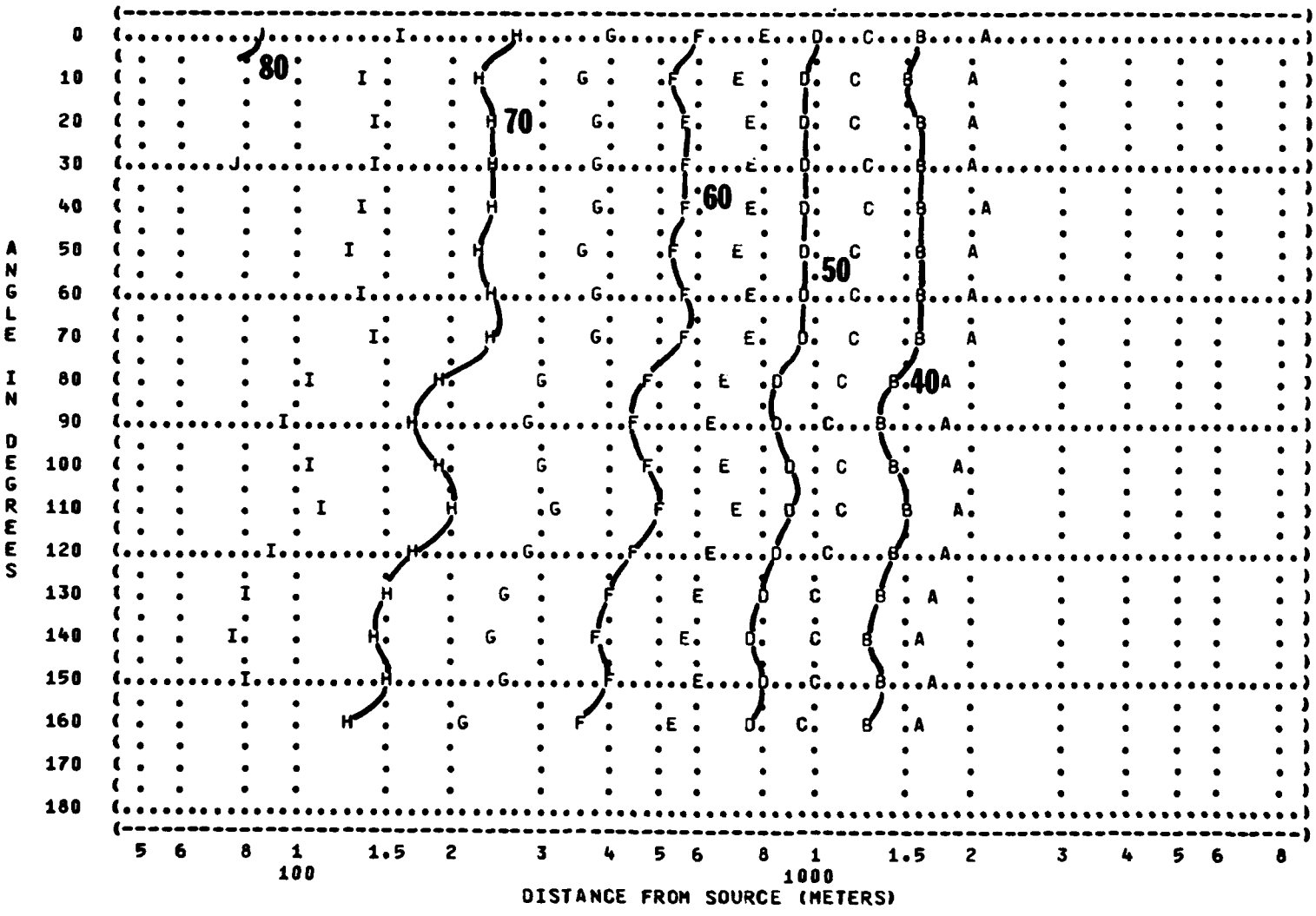


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 20

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

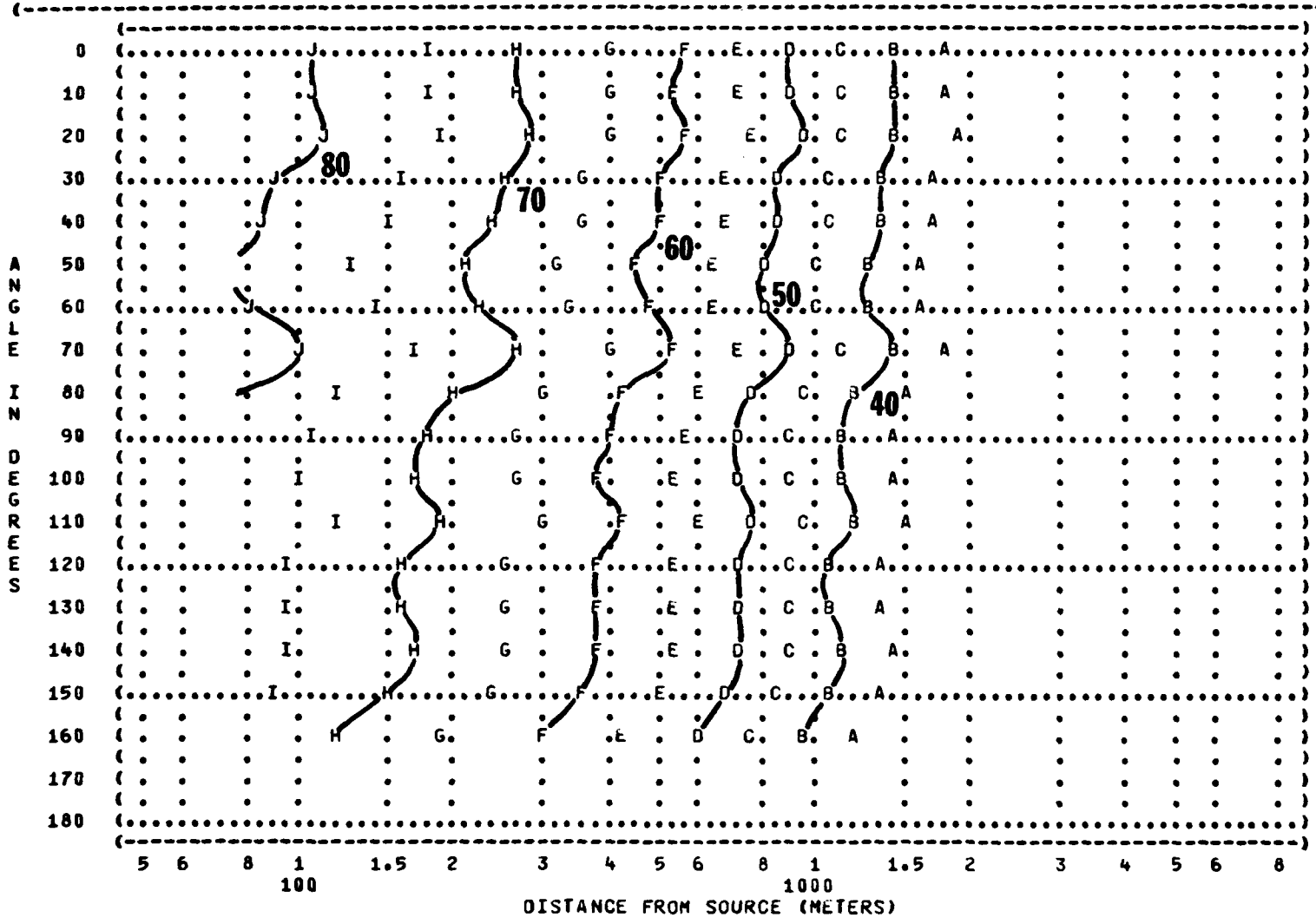


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85

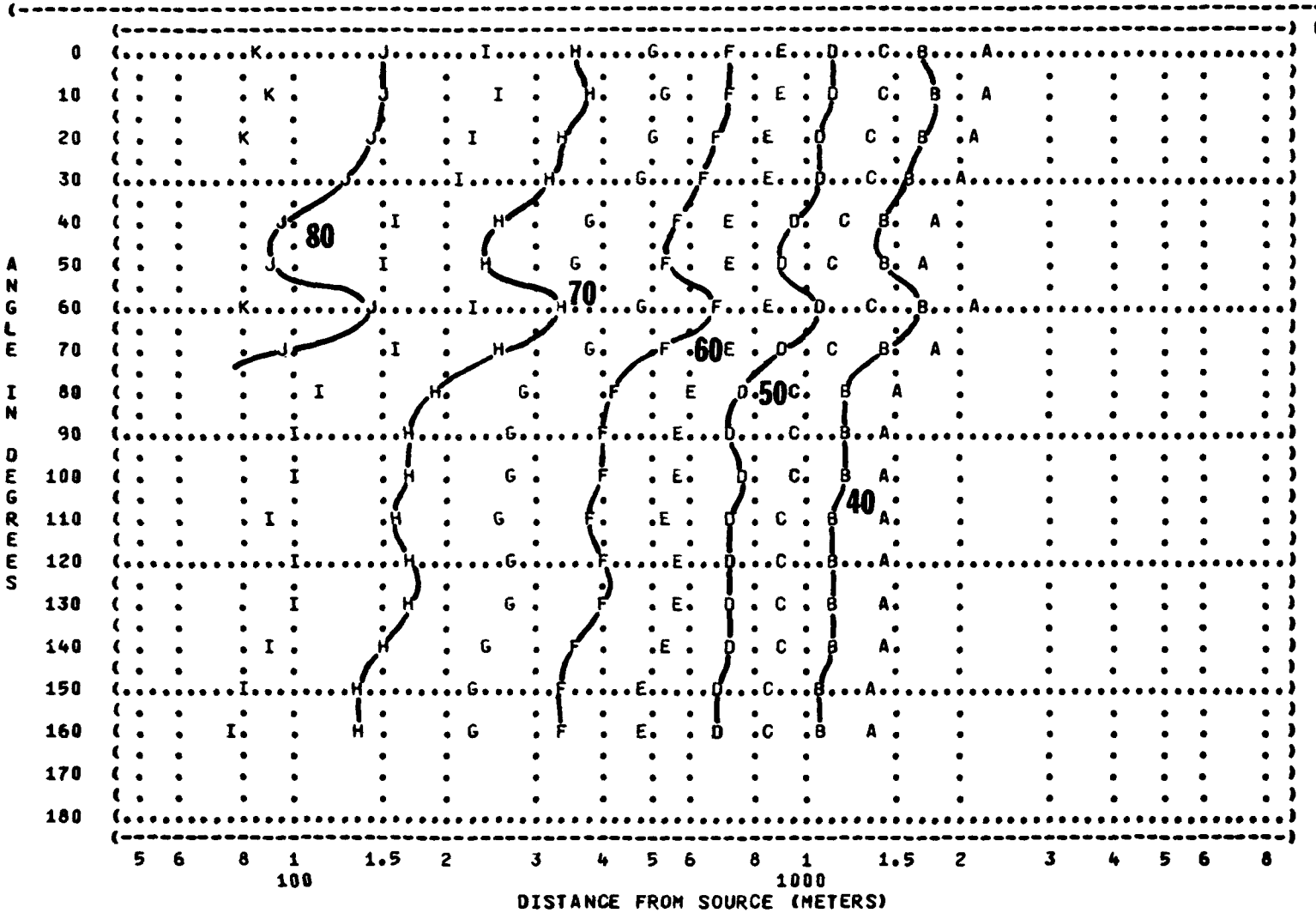


FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

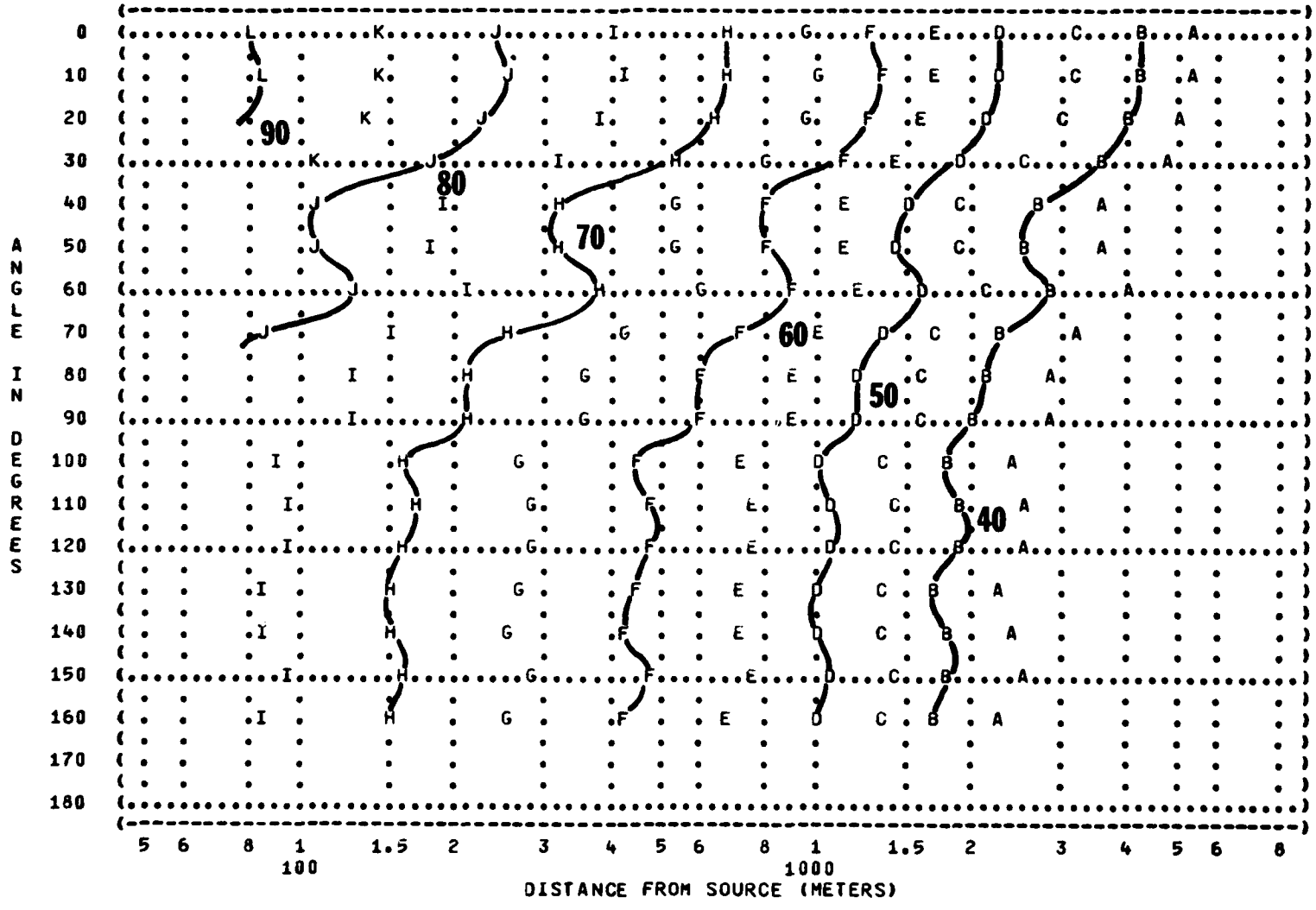


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 23

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90

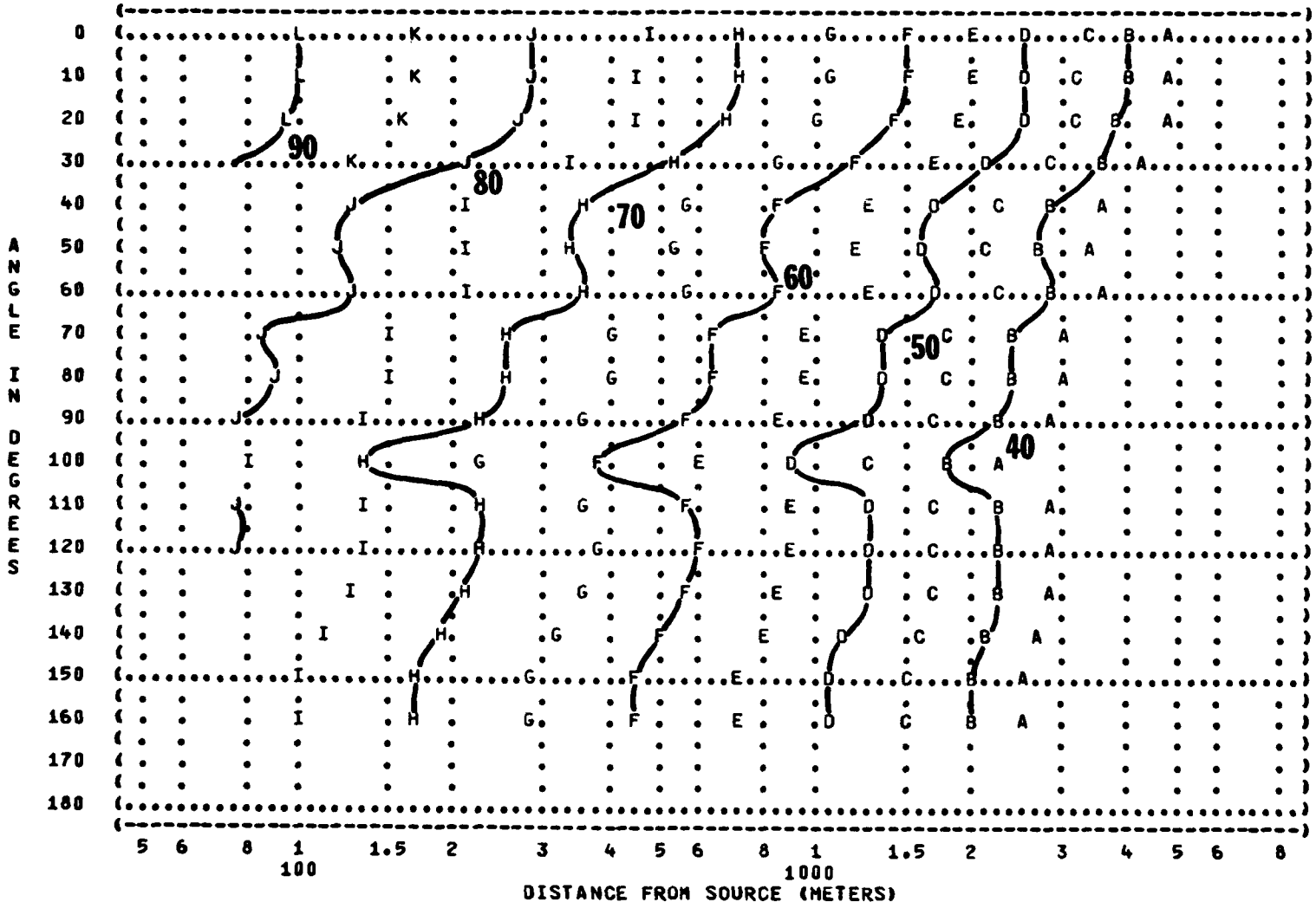


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

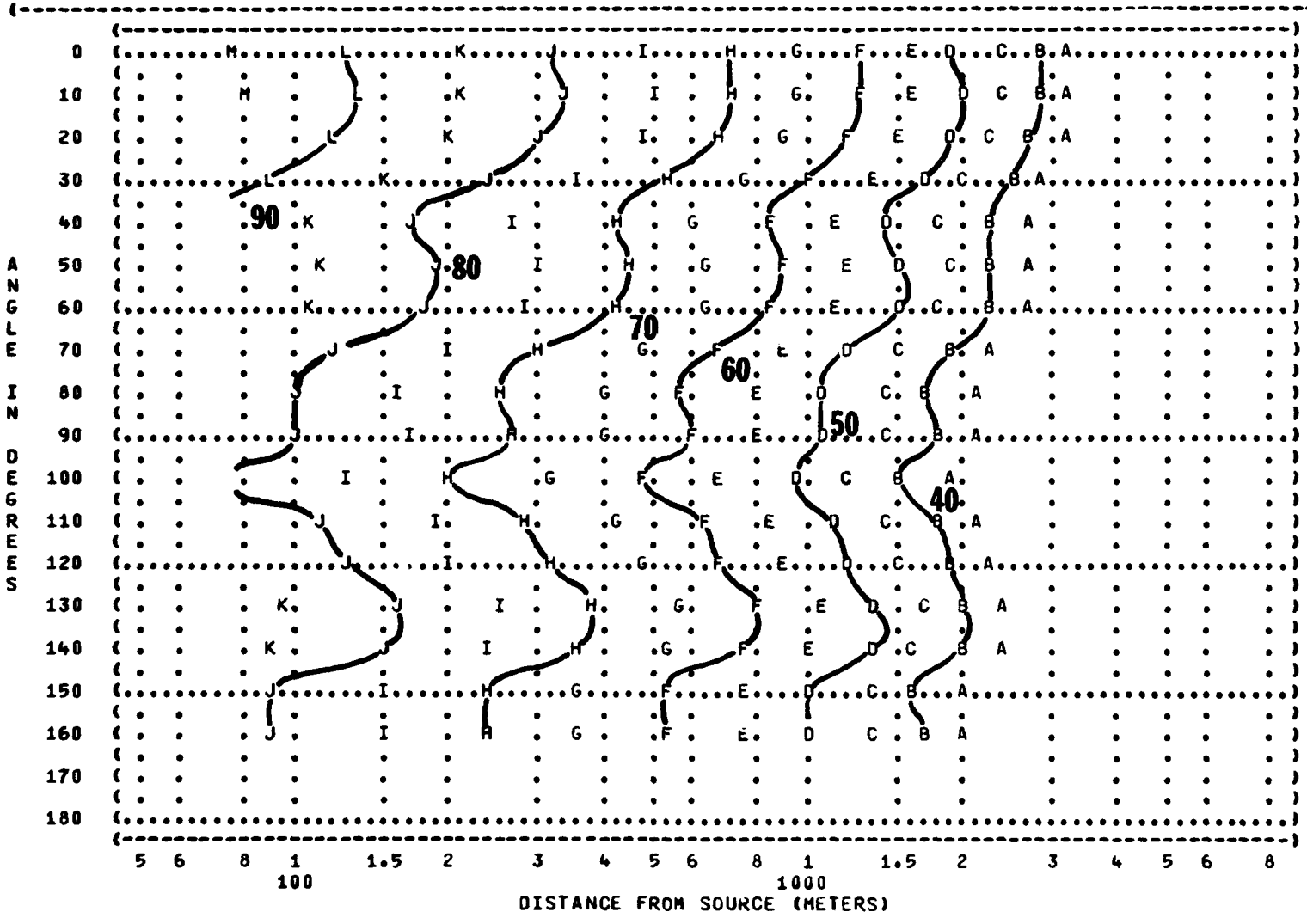


FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
11 4000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 25

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90

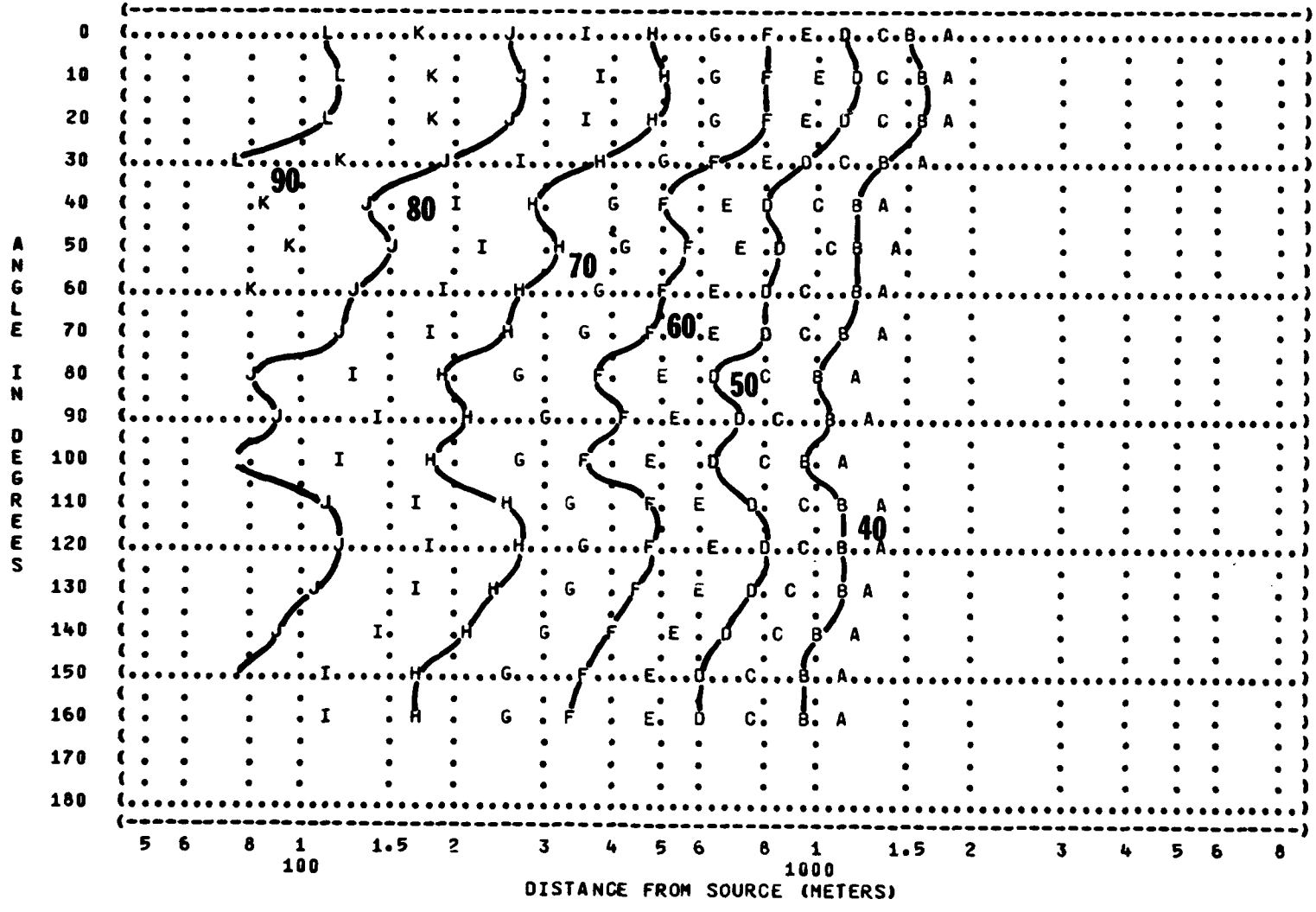


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE
55% RPM, 1.04 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 01
06 MAY 75
PAGE 26

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80

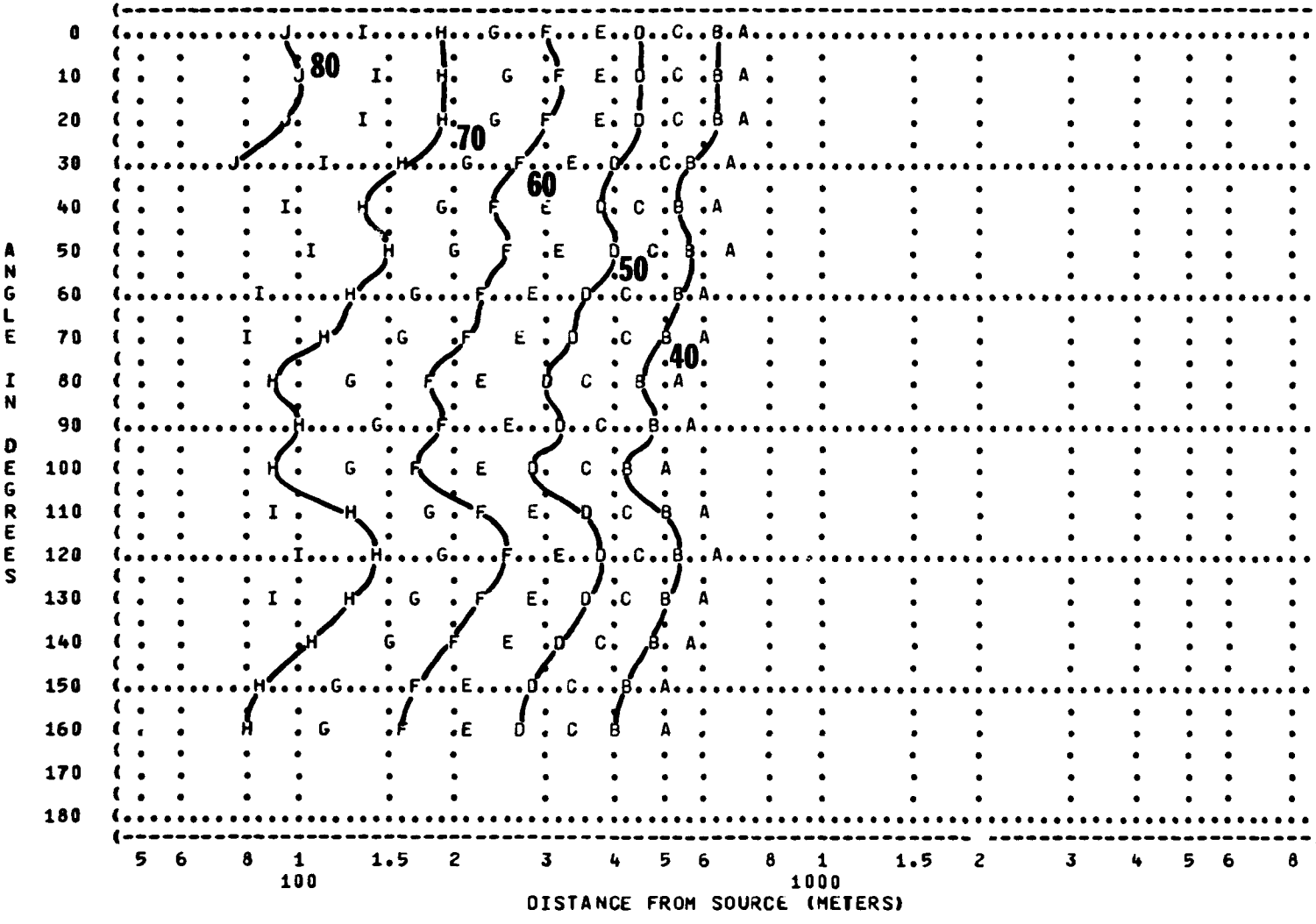


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 18

POINT	DB
A	40
B	45
C	50
D	55
E	60
F	65
G	70
H	75
I	80
J	85
K	90

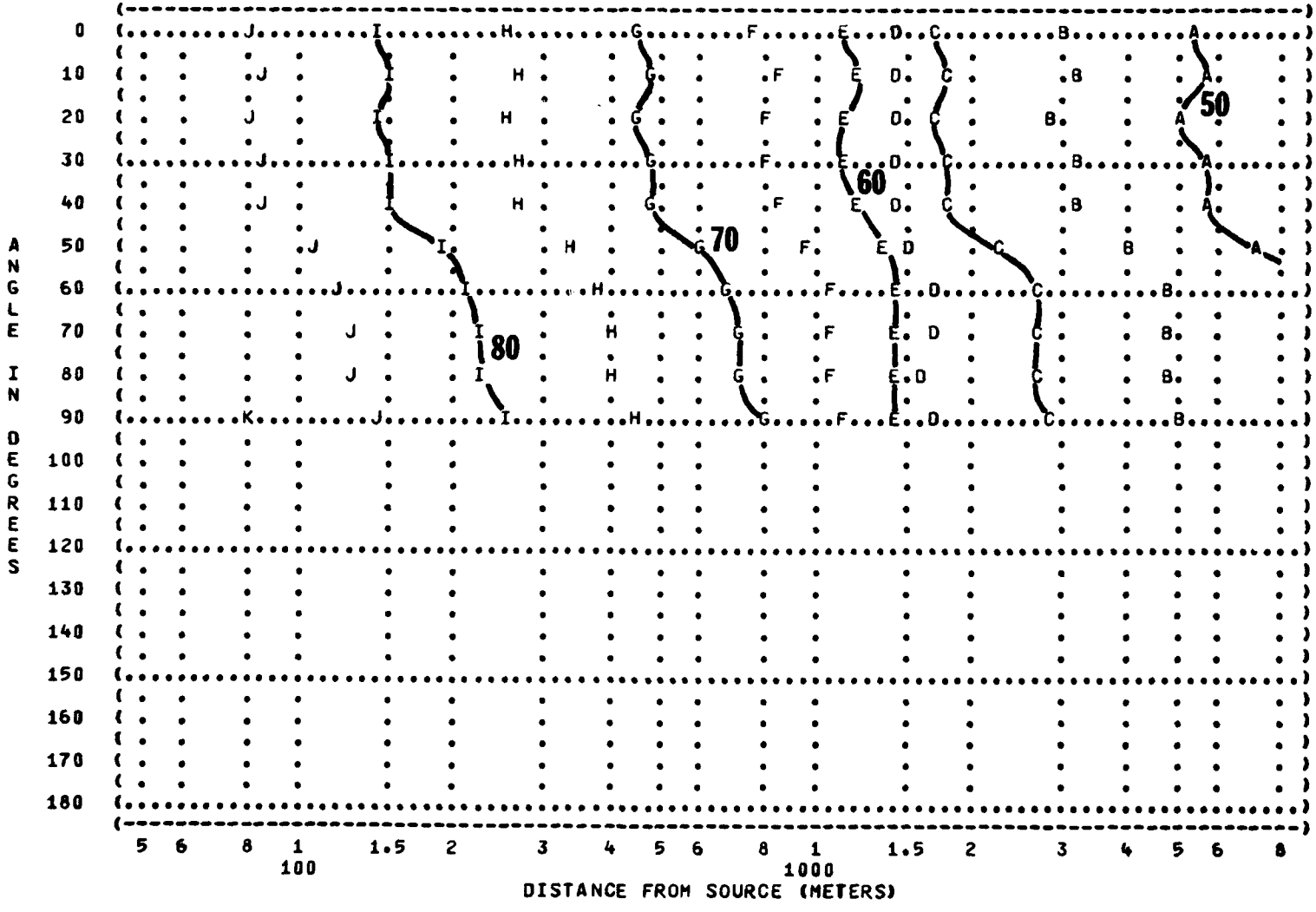


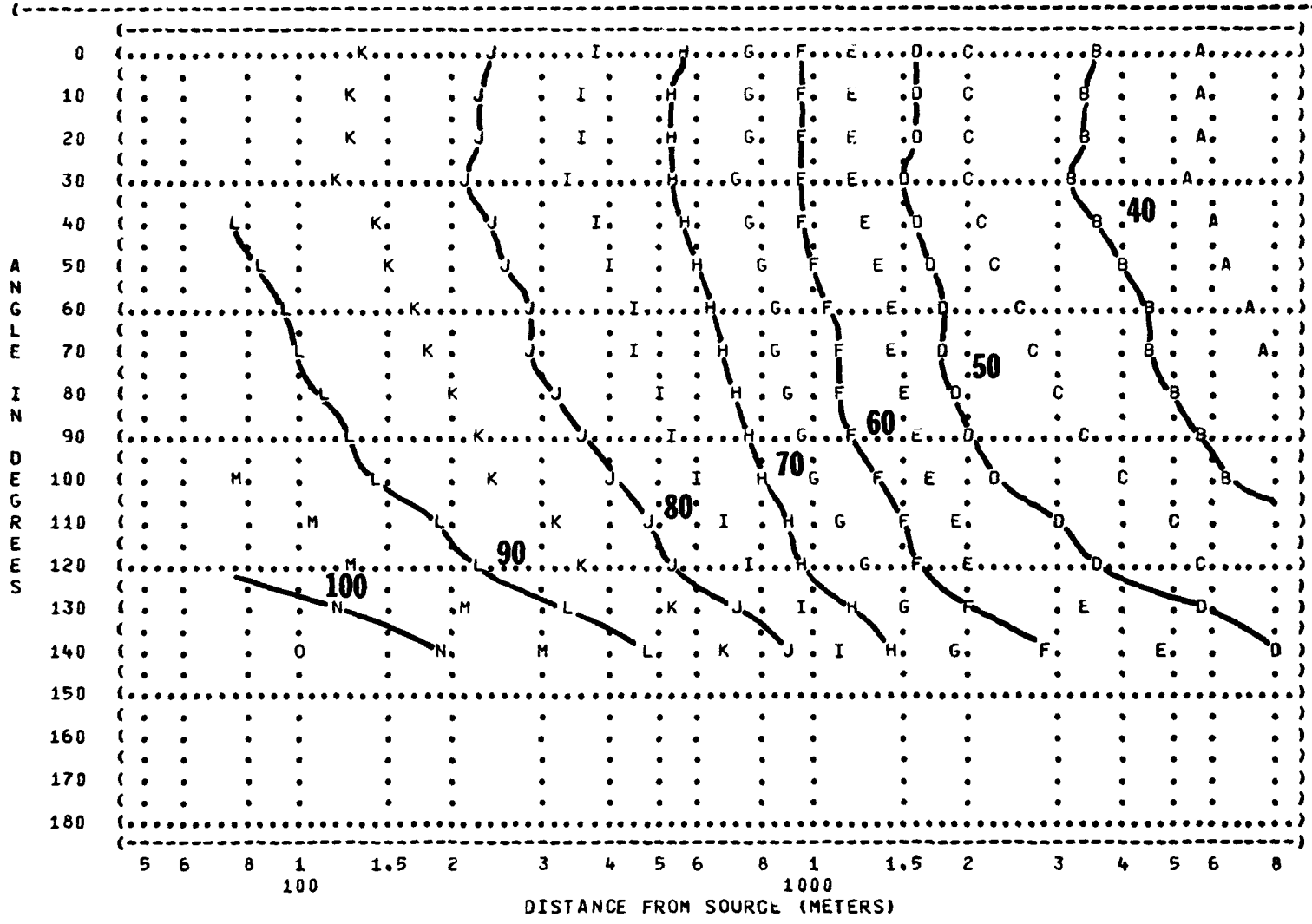
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 19



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

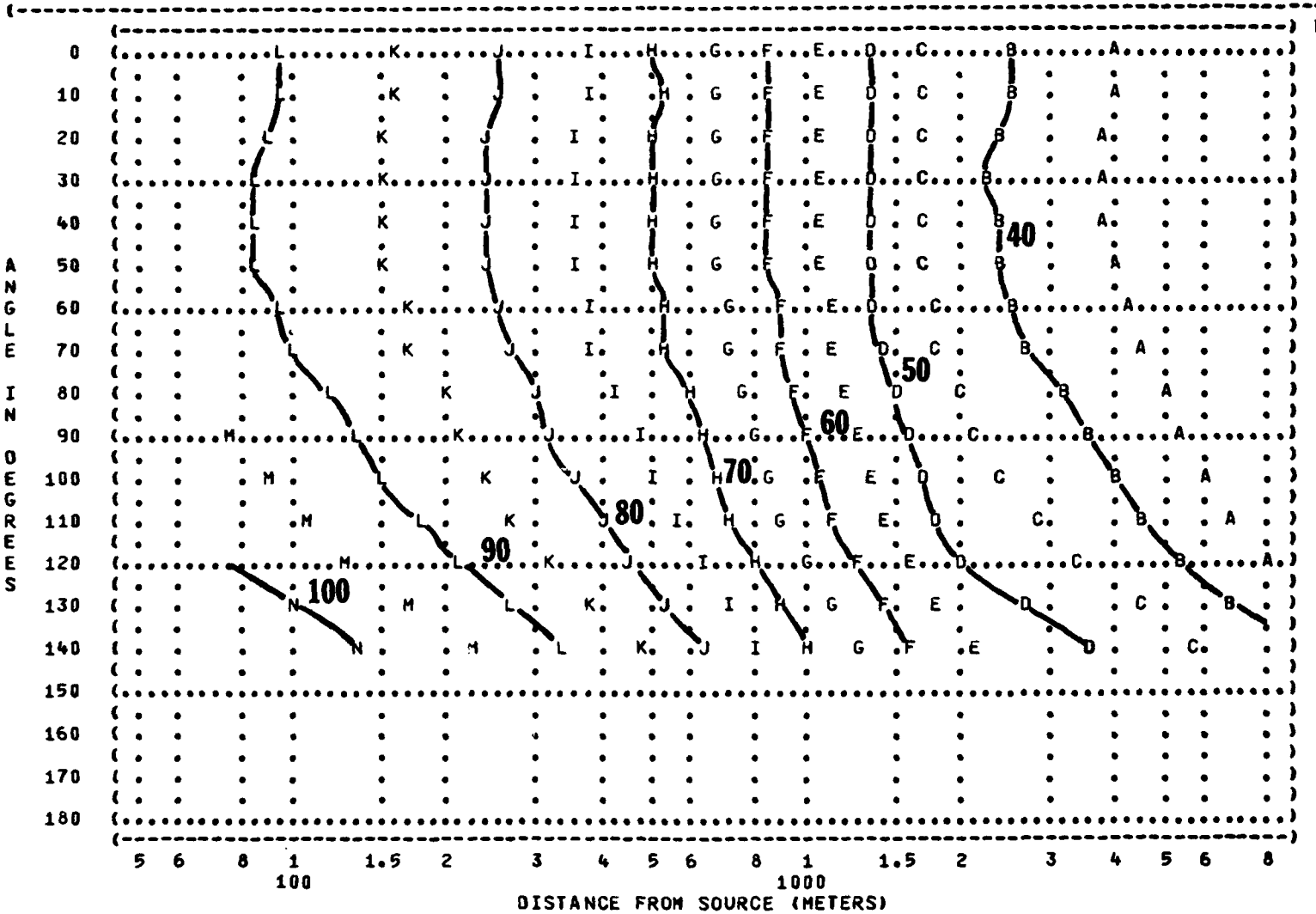
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 20



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

FIGURE 11: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 21

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95

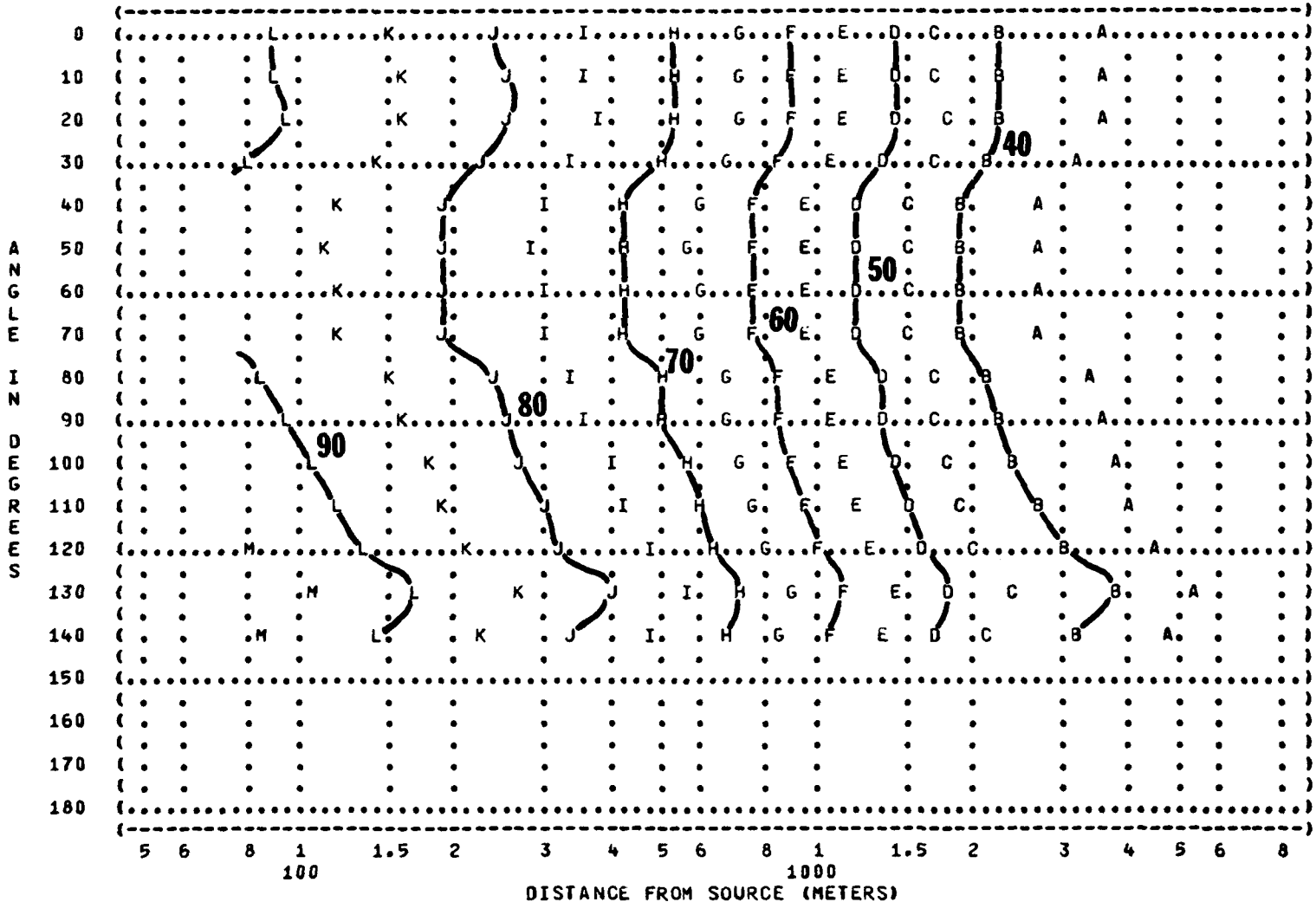


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

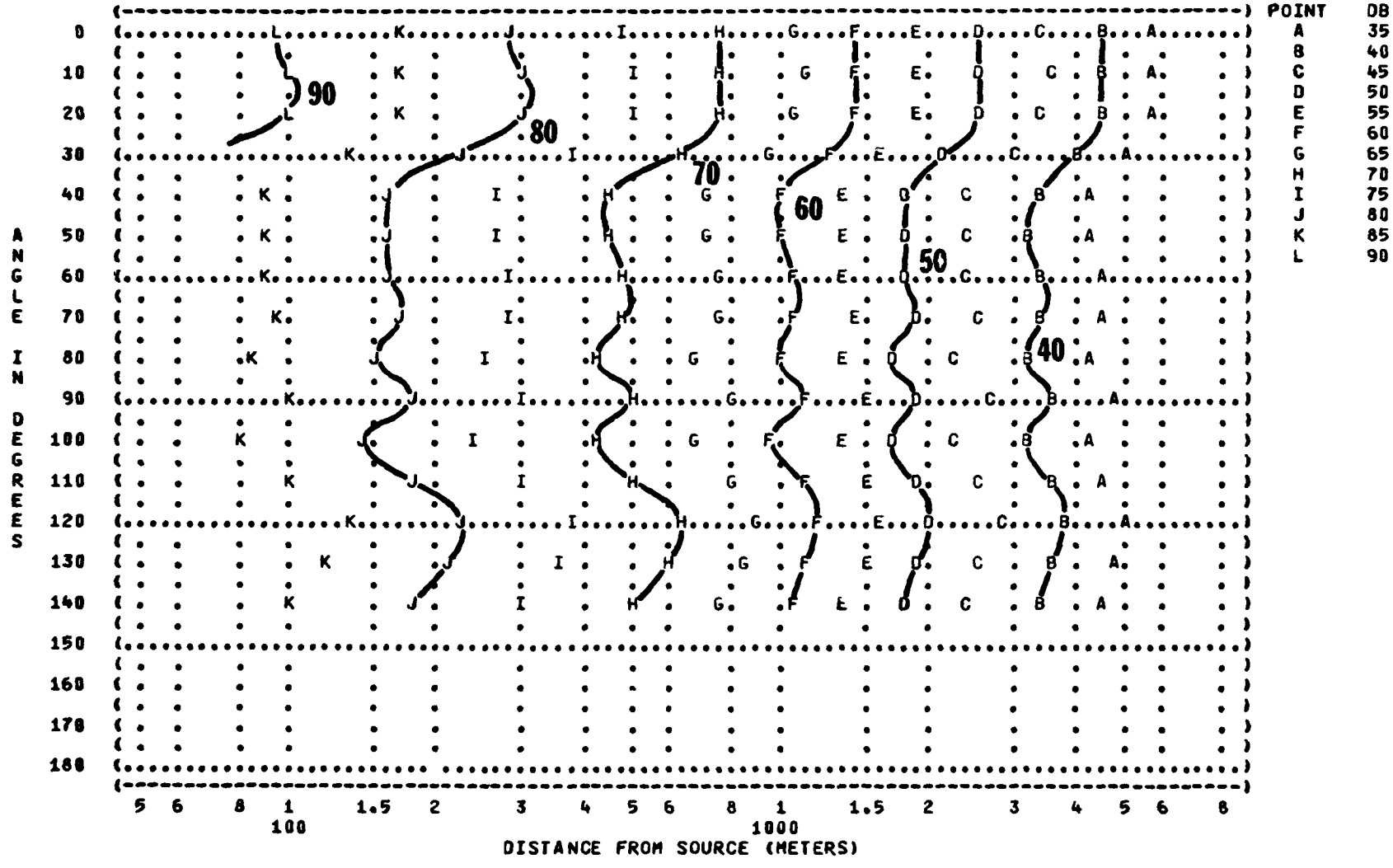


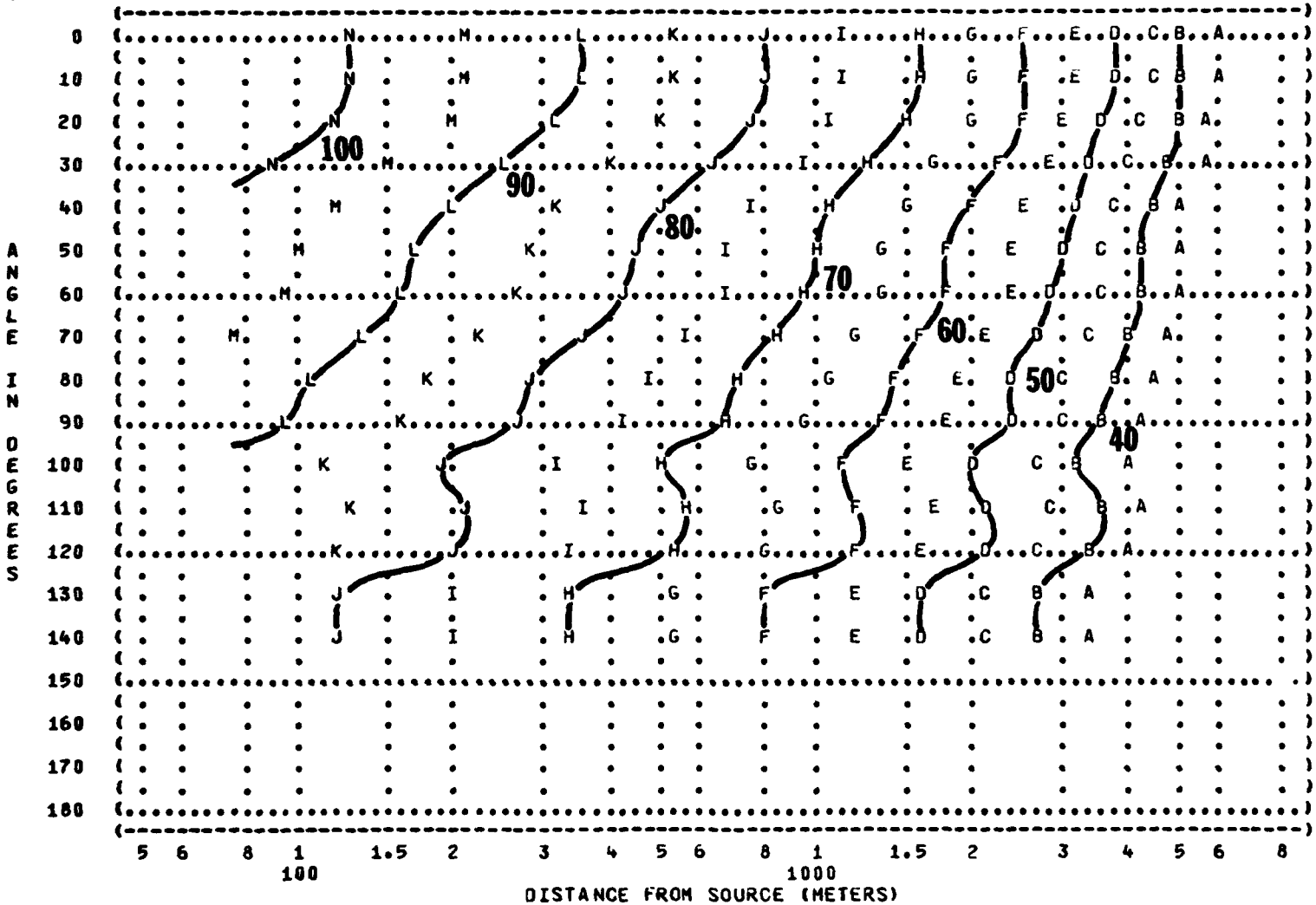
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 23



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

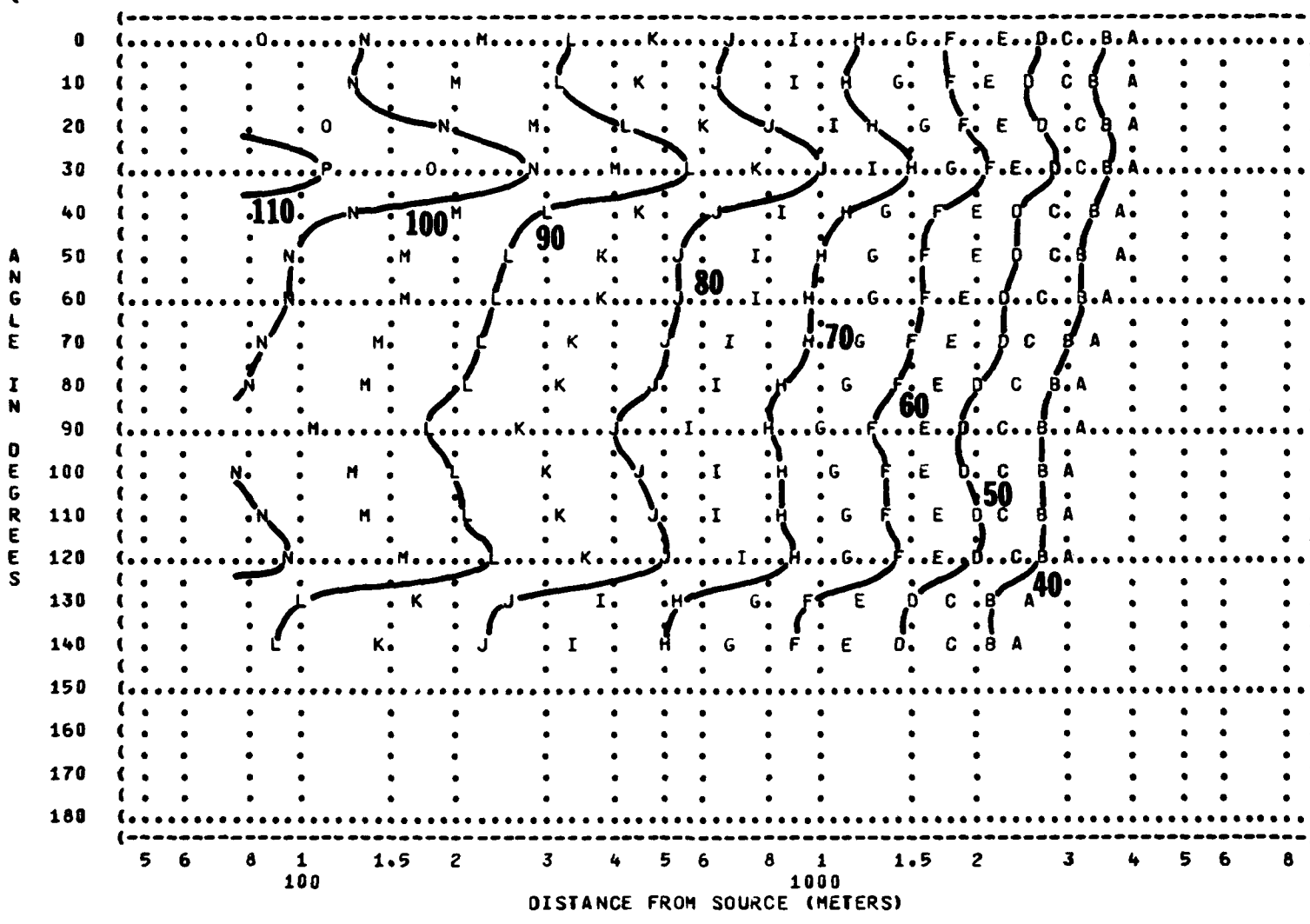
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-802-025
RUN 02
06 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

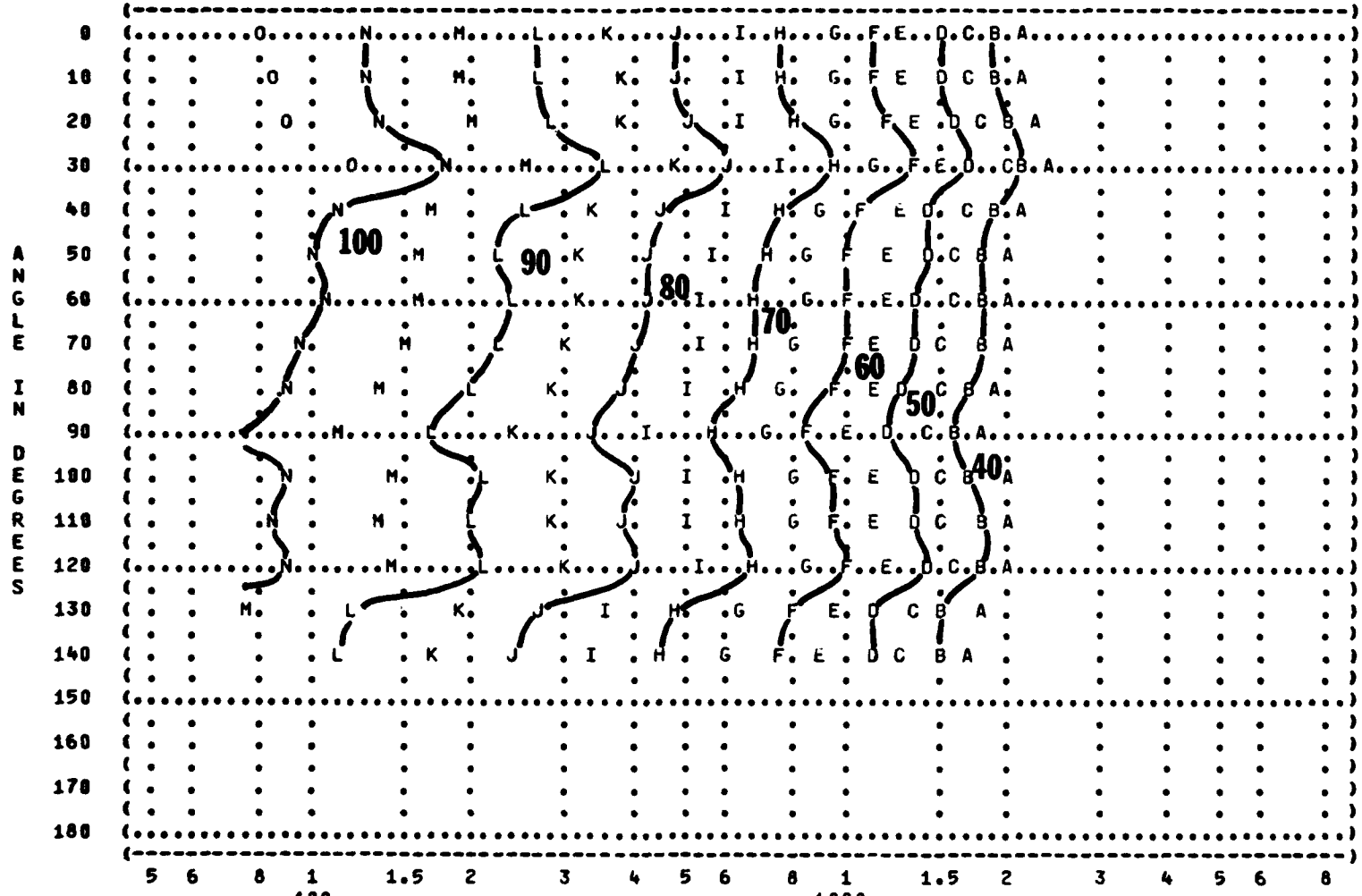
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 02
06 MAY 75
PAGE 25



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

IDENTIFICATION:
ONEGA 1.4
TEST 75-002-025
RUN 02

06 MAY 75

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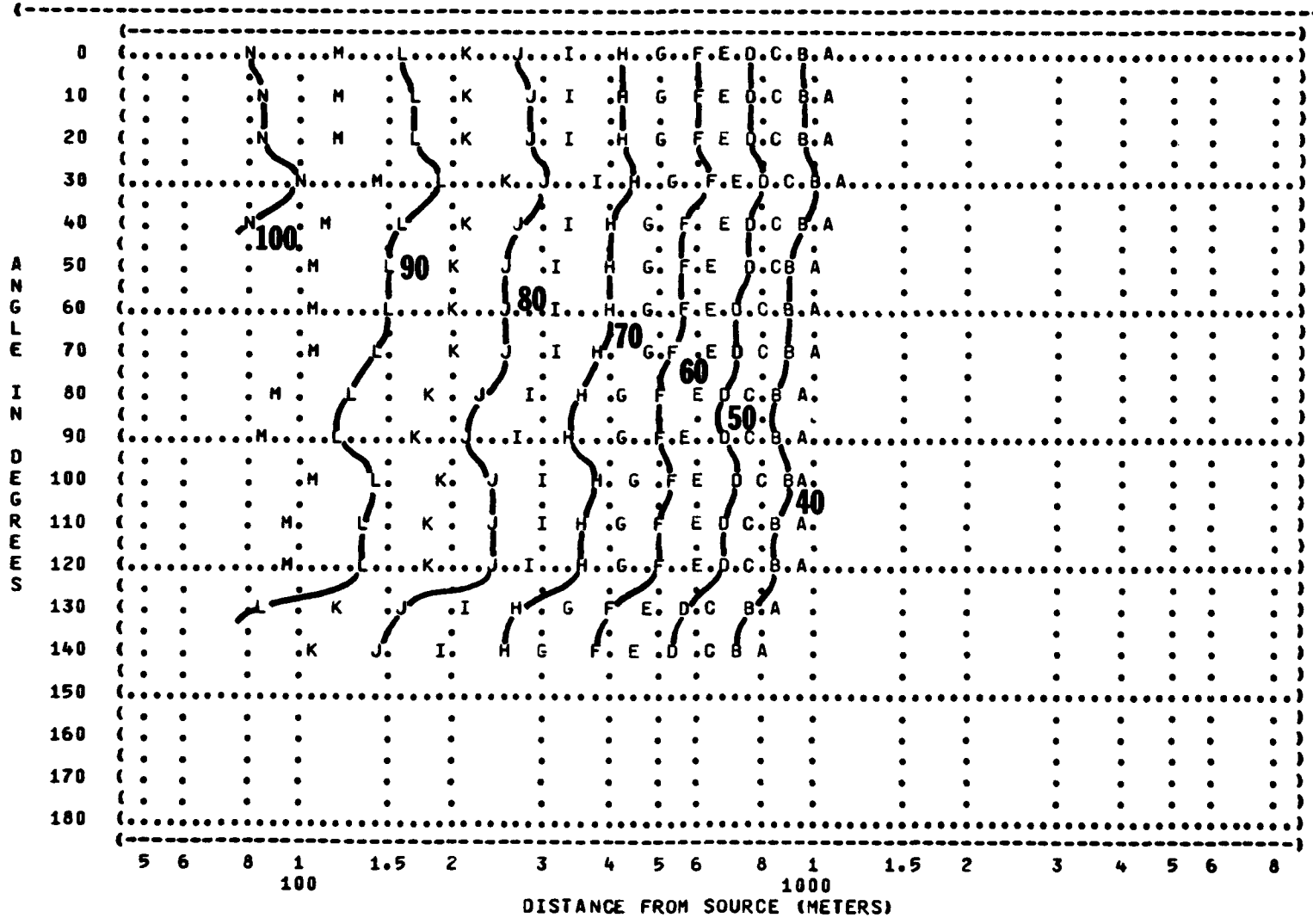
NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
87% RPM, 1.27 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100

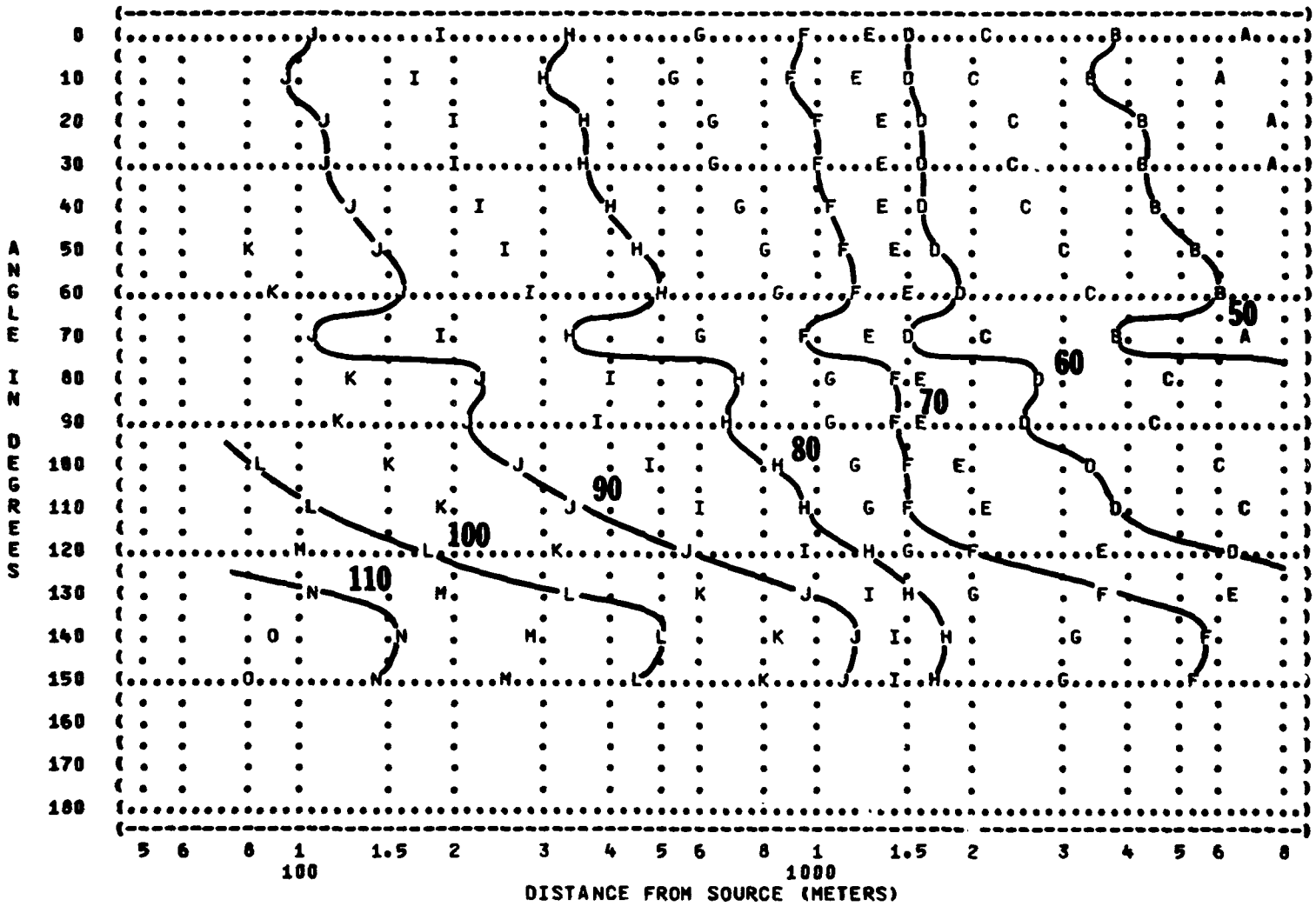
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-882-025 RUN 03 06 MAY 75 PAGE 18

NOISE SOURCE/SUBJECT: C-141A AIRCRAFT; TF33-P-7 ENGINE; FAR FIELD NOISE

OPERATION: MILITARY POWER; 98% RPM, 1.85 EPR; ALL ENGINES; FREE FLOW

METEOROLOGY: TEMP = 15 C; BAR PRESS = .760 M HG; REL HUMID = 70 %



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

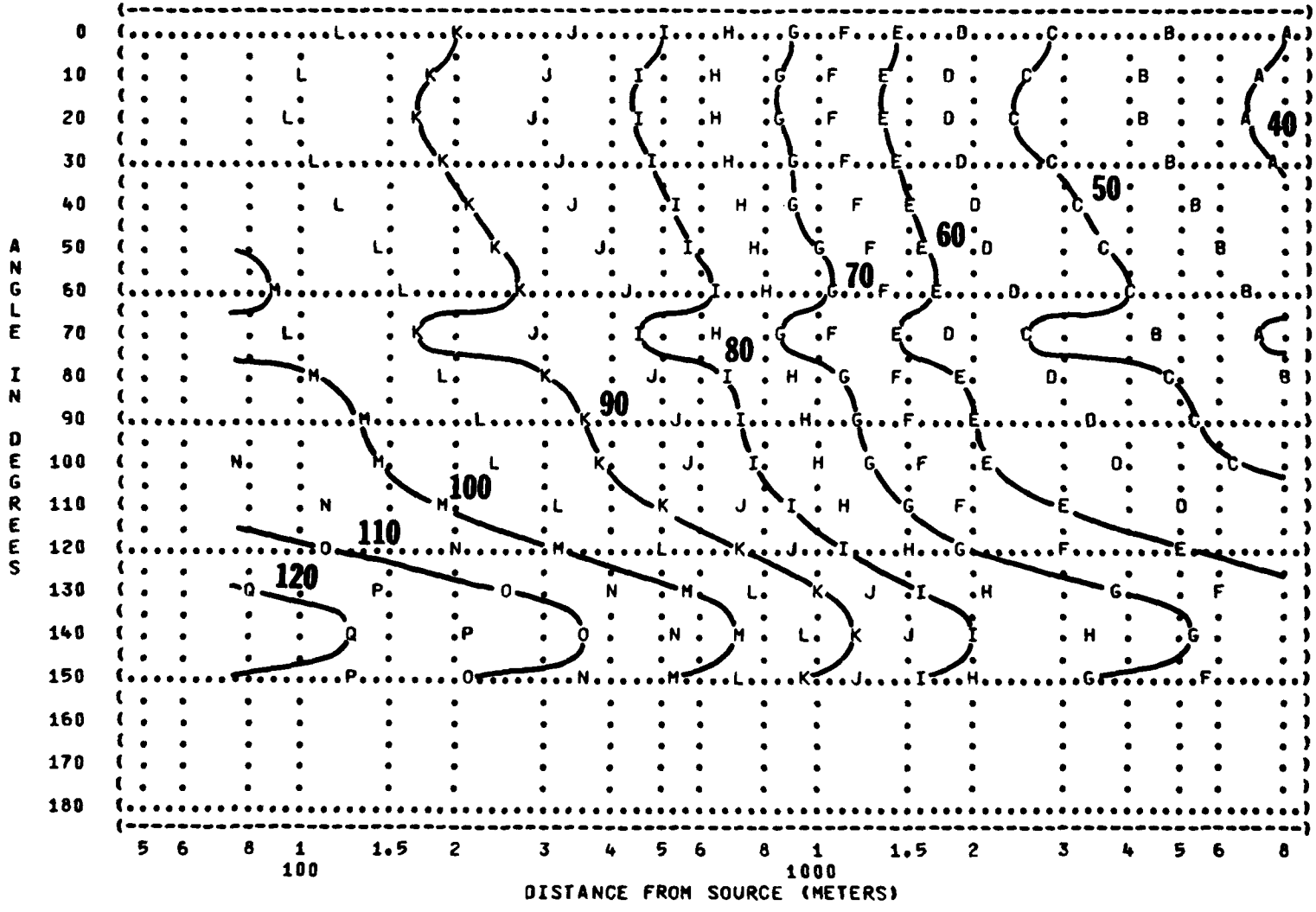
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 19



POINT	DB
A	40
B	45
C	50
D	55
E	60
F	65
G	70
H	75
I	80
J	85
K	90
L	95
M	100
N	105
O	110
P	115
Q	120

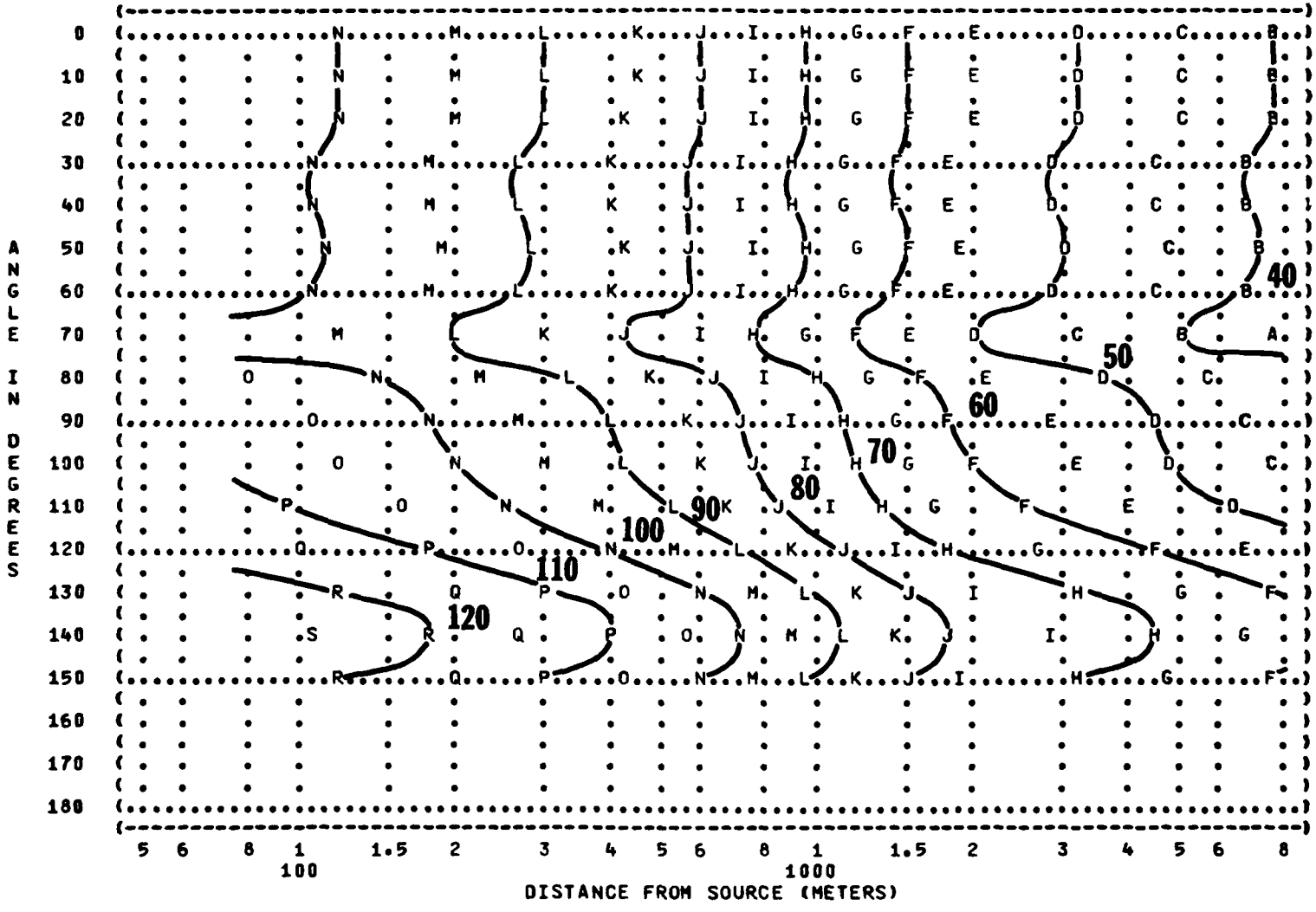
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 20

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120
S	125

FIGURE: 11

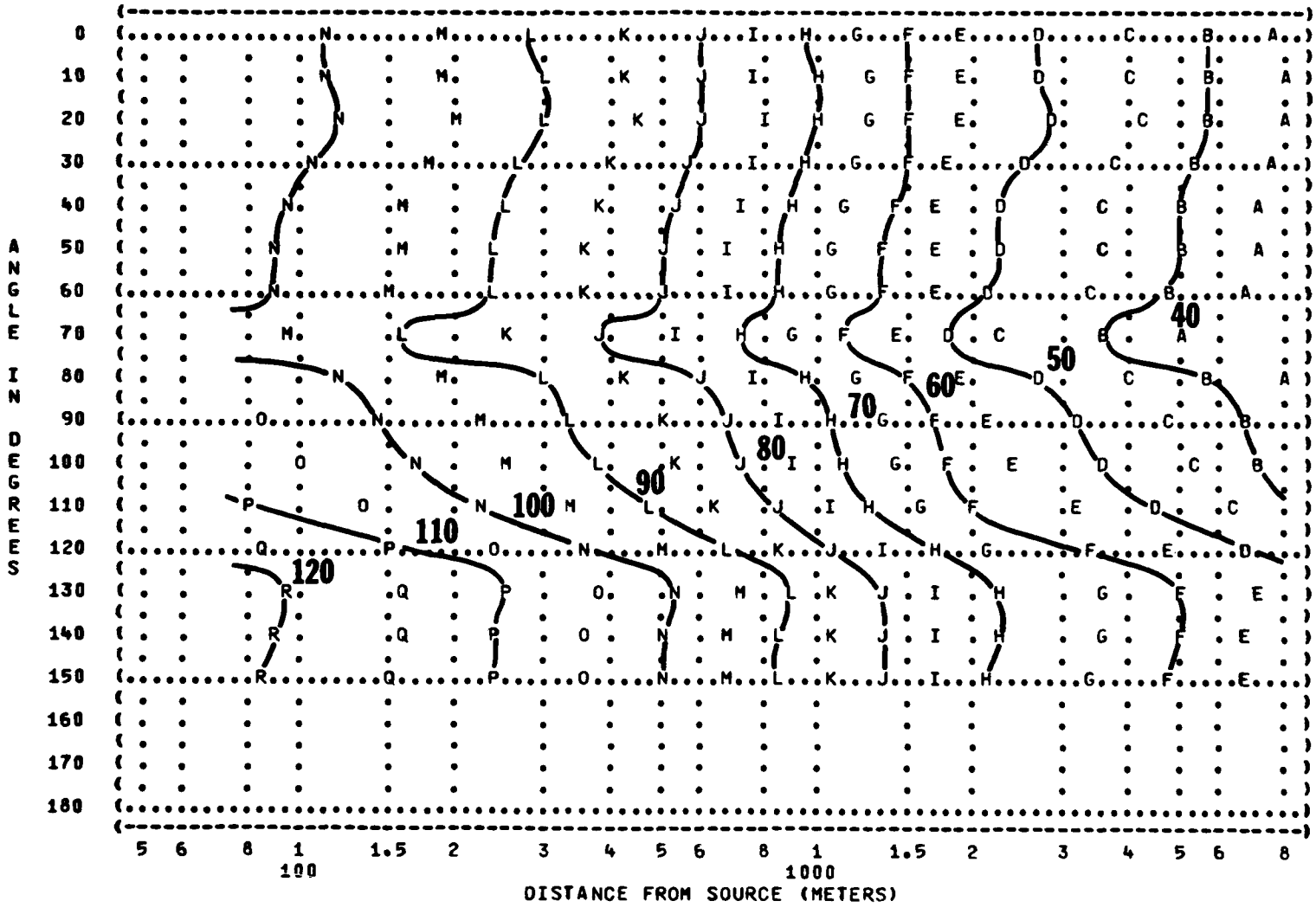
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-025 RUN 03 06 MAY 75 PAGE 22

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

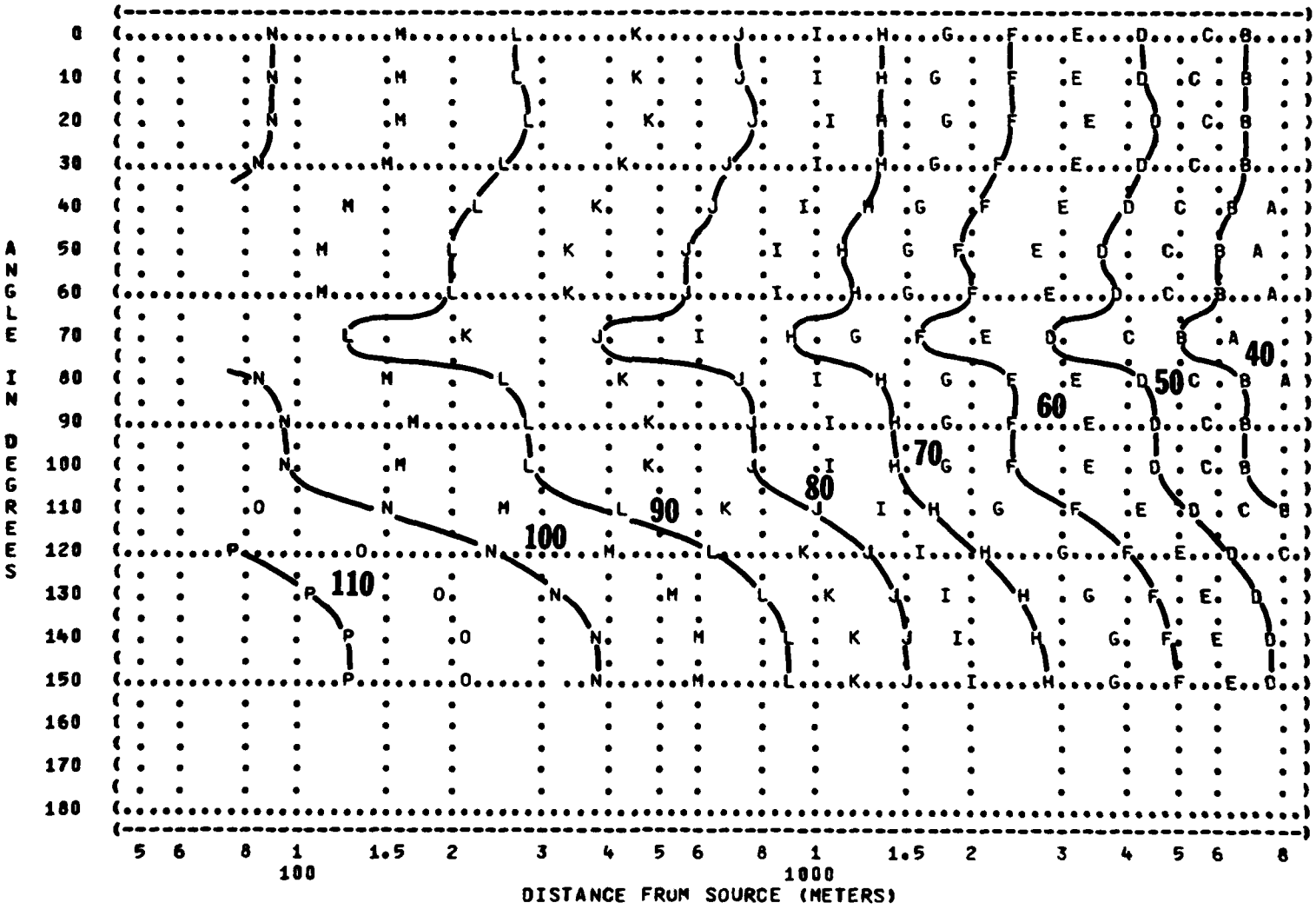


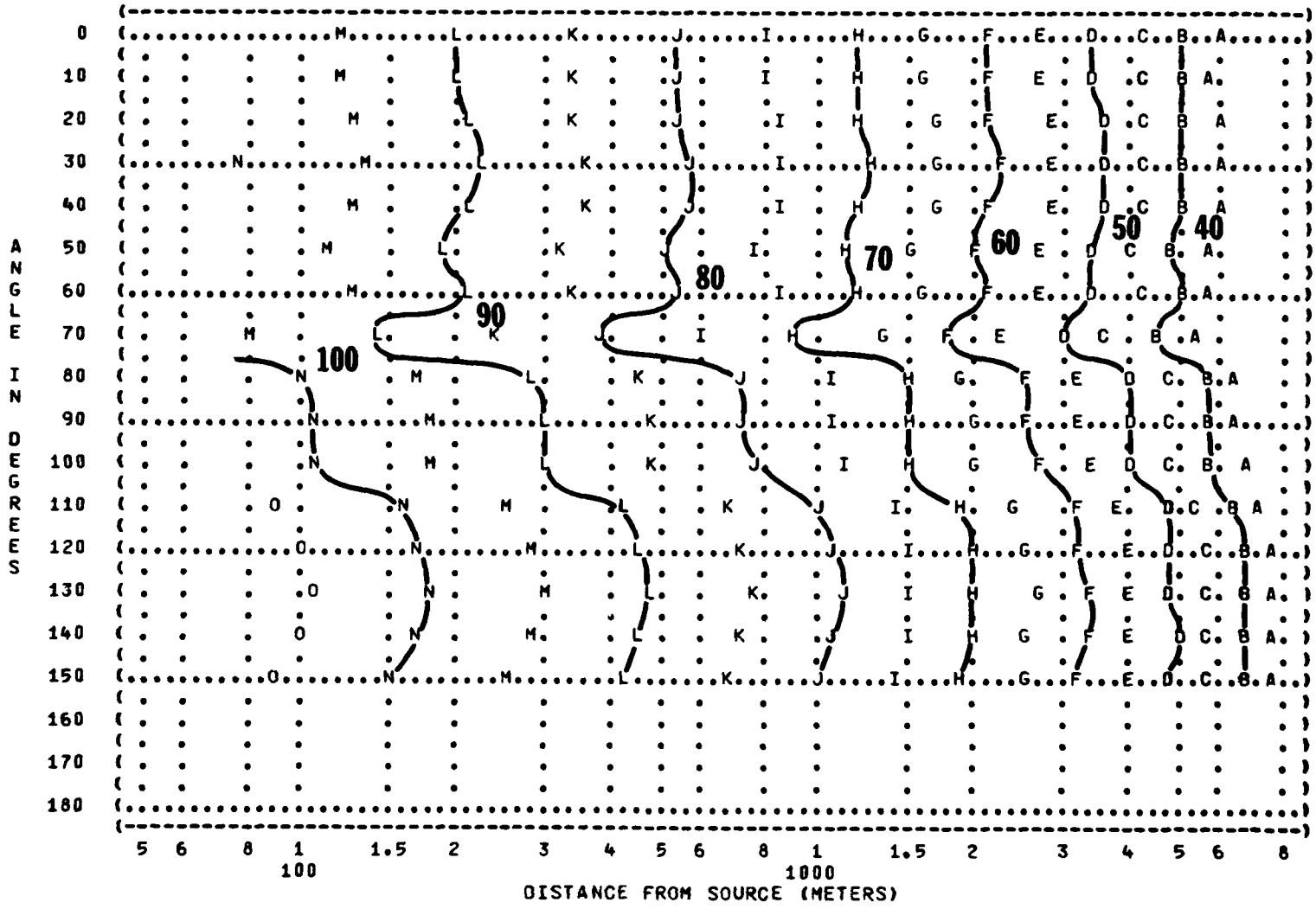
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

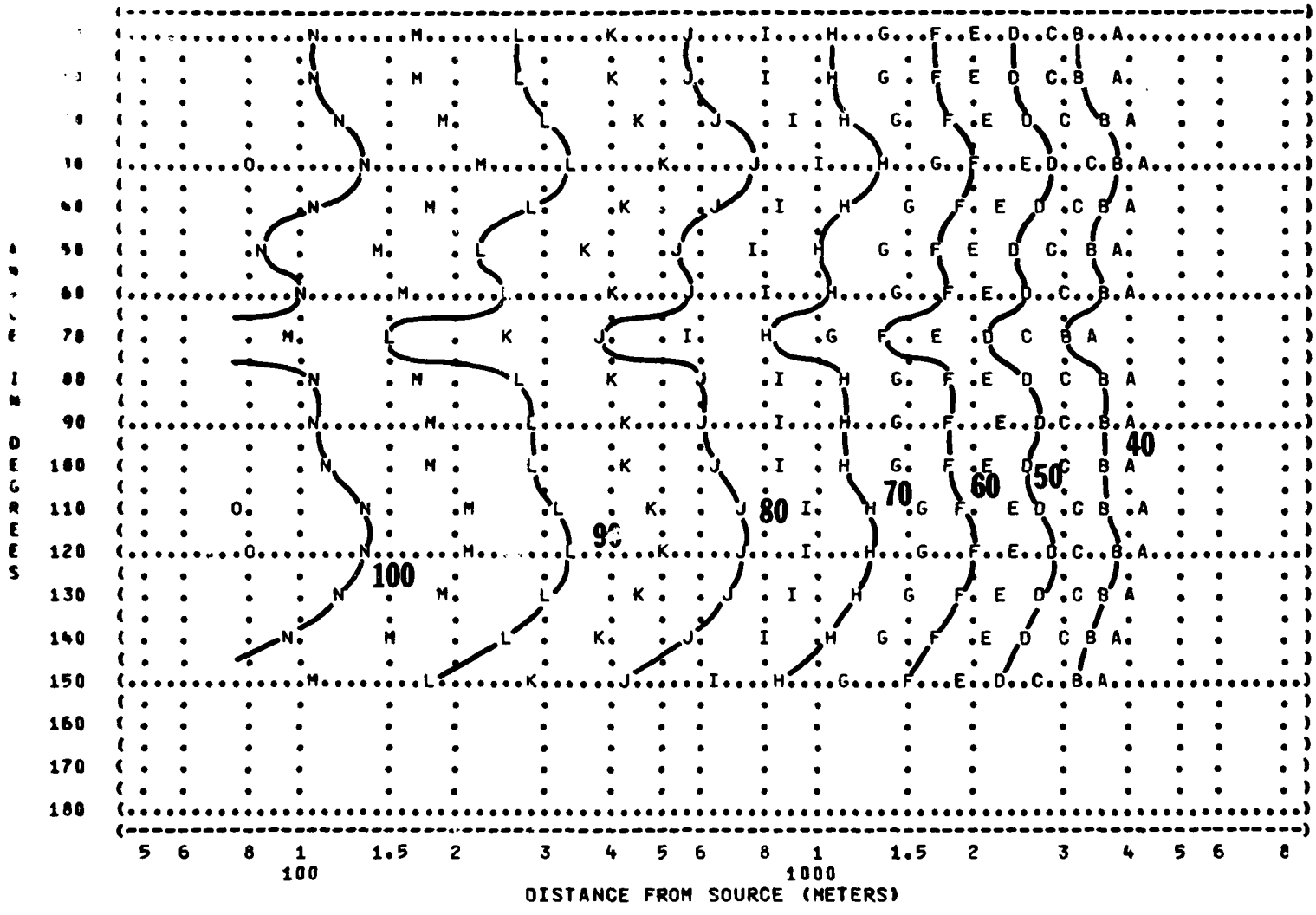
...ND PRESSURE LEVEL (SPL)
...AL LEVEL CONTOURS (DB)
... HZ OCTAVE BAND

...CE/SUBJECT:
...A AIRCRAFT
...-P ENGINE
... FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 24



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 25

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

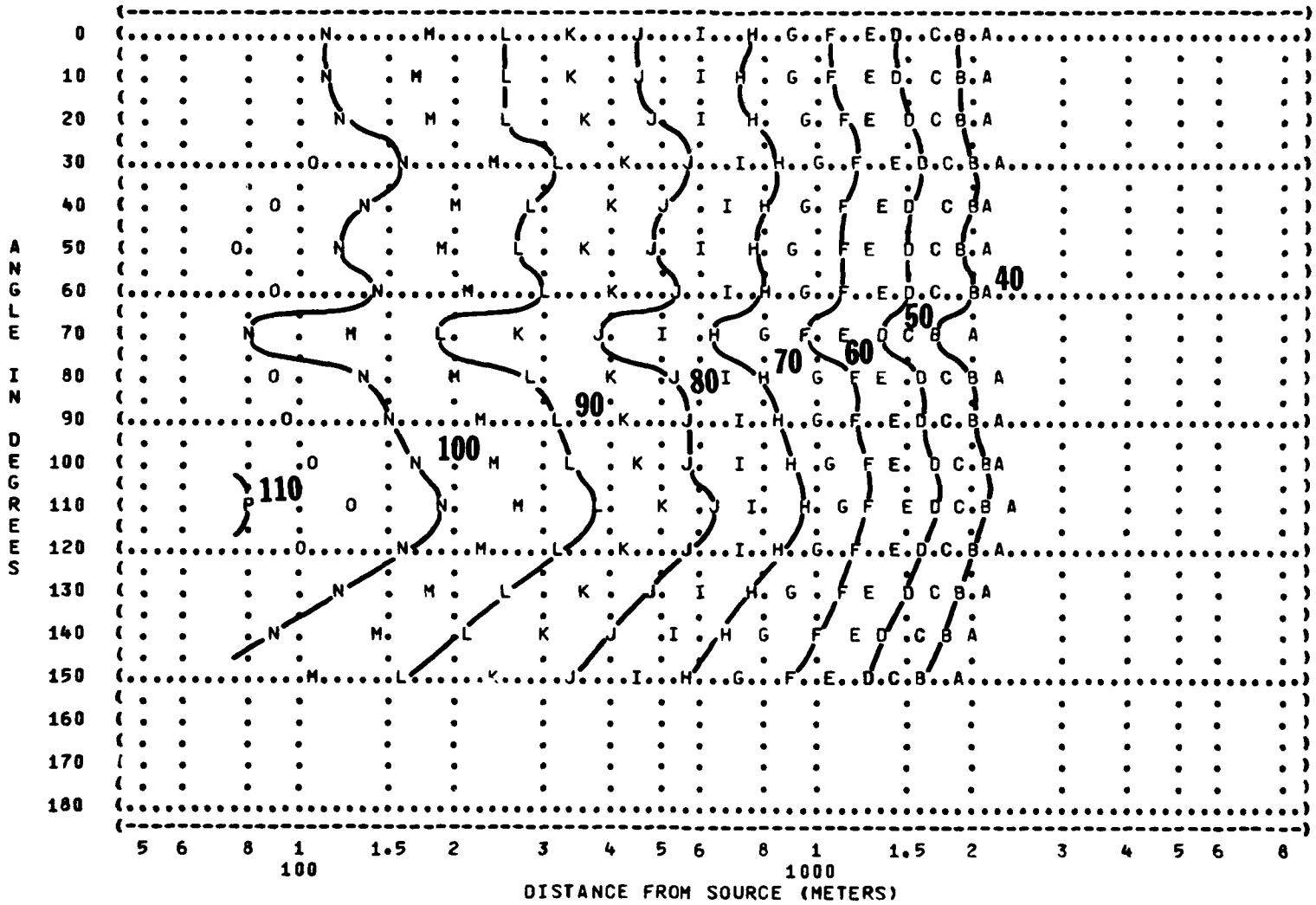


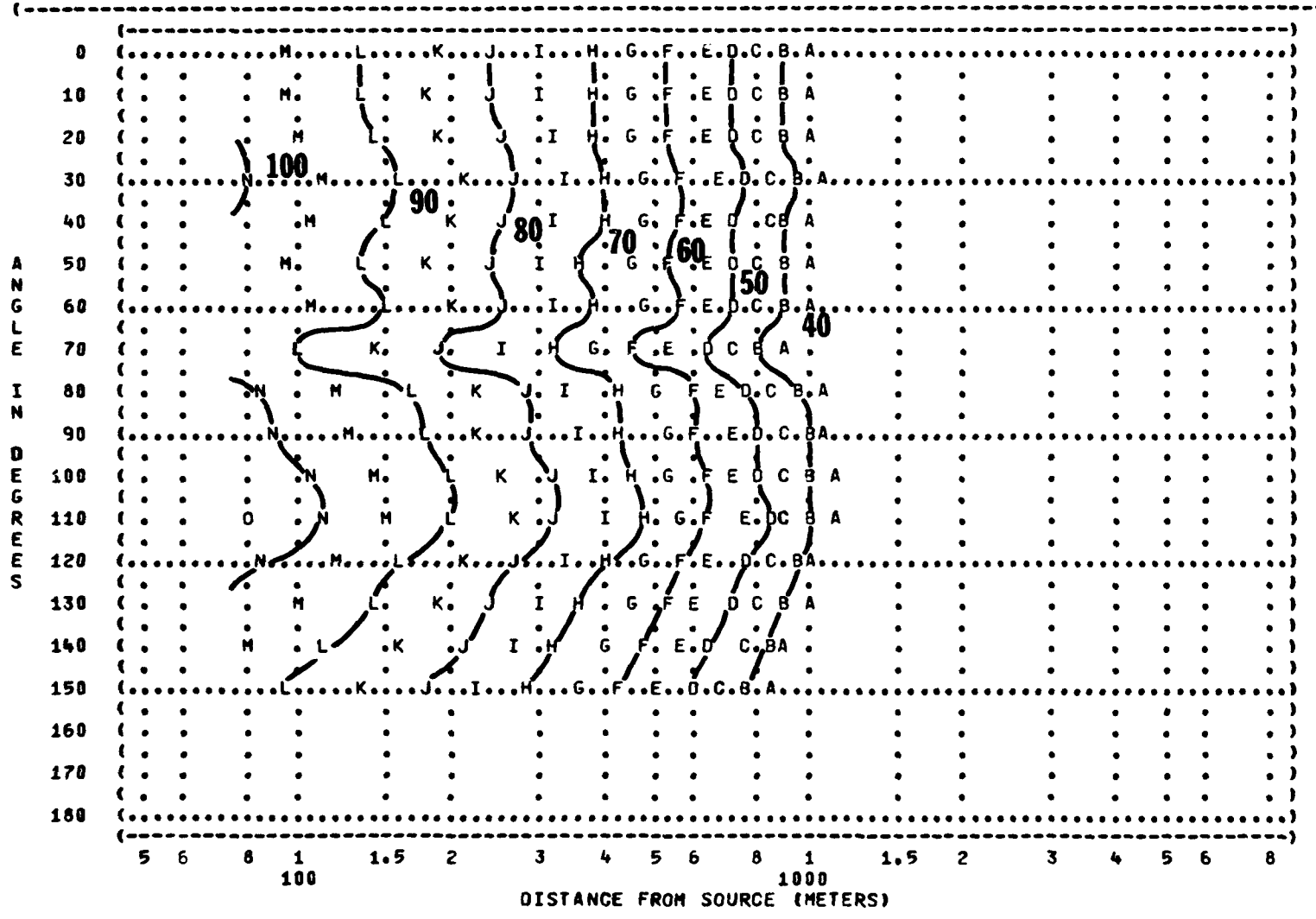
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-141A AIRCRAFT
TF33-P-7 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
98% RPM, 1.85 EPR
ALL ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-025
RUN 03
06 MAY 75
PAGE 26



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105

*U.S.Government Printing Office: 1979 — 657-084/295